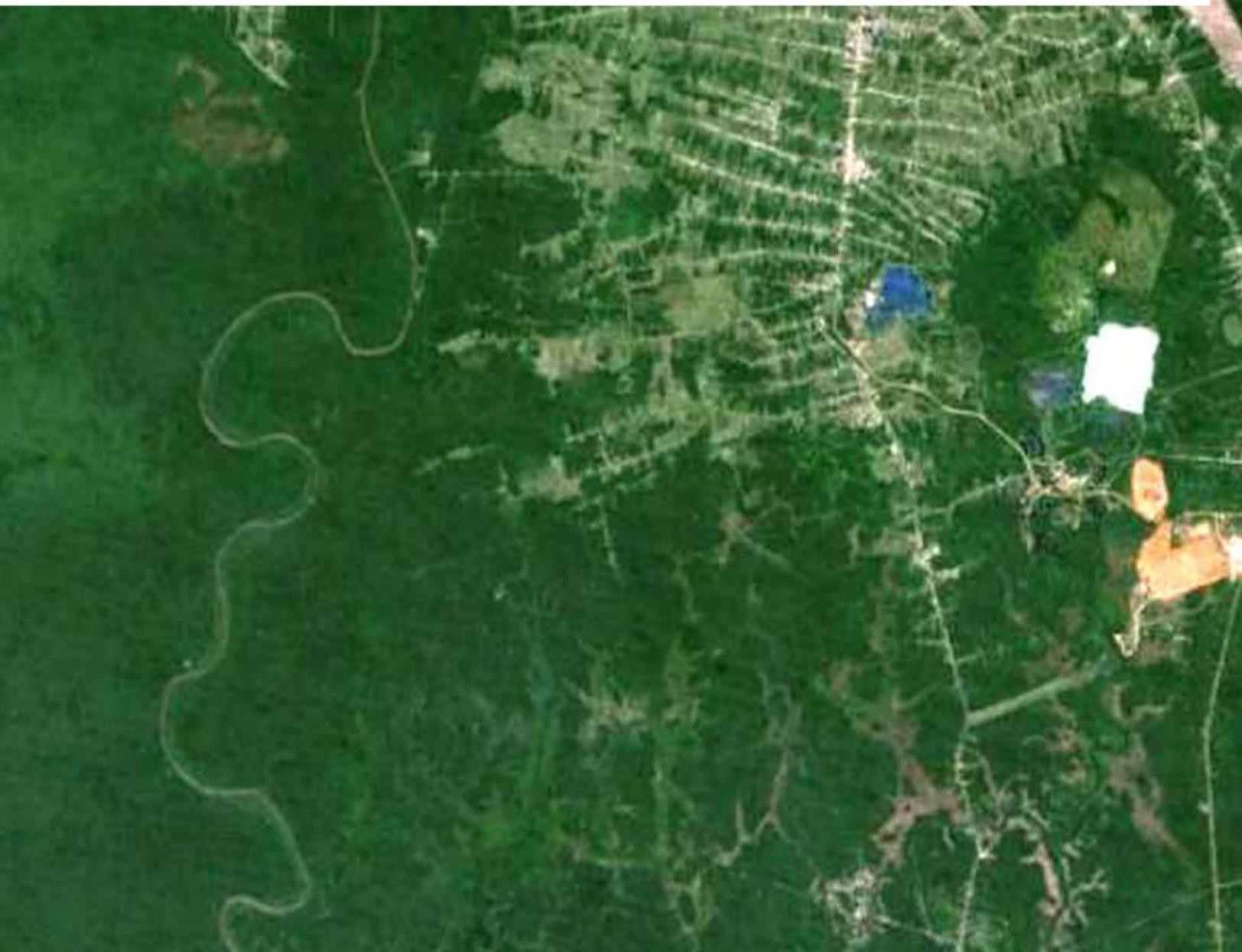


SUPPORT SOUND LAND USE PLANNING IN SURINAME

FINAL REPORT



March 2015



Prepared for the Ministry of Ruimtelijke Ordening, Grond- en Bosbeheer

Funded by WWF Guianas



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Acknowledgements

The authors are thankful to all District Commissioners and their representatives, Government officials, representatives of private organizations and individuals for the valuable information, time and insights they have contributed.

A special thanks to the Ministry of RGB and WWF Guianas for their information and logistical support for the development of this report.

This report was made possible with financial support from WWF-NL, WWF-Belgium and the Dutch Embassy in Paramaribo through WWF Guianas in Suriname.

Views and opinions expressed in this report are those of the consultants and persons interviewed and do not necessarily reflect the views of the Ministry of RGB and WWF Guianas. Therefore, they should not, unless otherwise mentioned, be attributed to the ministry or WWF.

Nancy del Prado, Henk Lutchman and Christine Toppin- Allahar

Paramaribo, Suriname

March 2015

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List of Abbreviations

(P)PGIS	(People) Participatory Geographic Information System
3D	3-Dimensional
ABS	General Bureau for Statistics in Suriname
ADEKUS	Anton de Kom University of Suriname
AEZ	Agricultural Ecologic Zoning
AMP	Agricultural Master Plan
B&W	Black and White (Panchromatic)
BLO	Bureau for Rural Development
BWIR	Black and White Infrared
CARICOM	Caribbean Community
CELOS	Centre for Agricultural Research in Suriname <i>Centrum voor Landbouwkundig Onderzoek in Suriname)</i>
CHPA	Central Housing & Planning Authority (Guyana)
CIR	Colour Infrared (<i>also: False Colour</i>)
DBK	Soils Survey Department
DCA	Development Control Authority (OECS Countries)
DEM	Digital Elevation Model (<i>also: Height Model or Terrain Model</i>)
DISTYP	District Typology
DMT	Decision Making Tree
DSS	Decision Support System
EEZ	Ecological Economic Zoning
EIAs	Environmental Impact Assessments
EMS	Ecological Main Structure
EWS	Early Warning System
FAO	Food and Agriculture Organization
G.B.	Government Gazette
GDB	Geo-data base
GIS	Geographic Information System
GLIS	Geographic and Land Information System

GLSC	Guyana Lands & Surveys Commission
GPA	Greater-Paramaribo Area
IDCS	Investment Development Corporation Suriname
IRD	Integrated Rural Development
IRPZ	Integrated Rural Planning Zone
ISP	Inclusive Spatial Planning
LBB	Suriname Forest Service
LEV	Land Evaluation
LIDAR	Laser Imaging Detection and Ranging (<i>also</i> : Light Intensity Distance and Ranging)
LSA	Land Suitability Analysis (for agricultural purposes)
LUP	Land Use Planning
LVV	Ministry of Agriculture, Animal Husbandry and Fisheries
MCs	Municipal Councils (Guyana)
MI	Main Infrastructure
MI-GLIS	Management Institute Land registration and land information System Suriname
MUMA	Multiple Use Management Area
MUPA	Multiple Use Planning Area
NARENA	Department of Natural Resources and Environmental Assessment under CELOS
NDCs	Neighbourhood Democratic Councils (Guyana)
NH	Ministry of Natural Resources
NPO	National Planning Office
OECS	Organization of Eastern Caribbean States
OP	Development Plan
OW	Ministry of Public Works
PGIS	Participatory GIS
PLOS	Ministry of Planning and Development Cooperation
PM	Participatory Mapping
RDCs	Regional Democratic Councils (Guyana)
RDM	Rural Development Management

RDMOS	Rural Development Monitoring System
REGTYP	Regional Typology
RGB	Ministry of Spatial Planning, Land and Forest Management
RLIS	Rural Land Information System
RMIS	Rural (regional) Management Information System
RO	Ministry of Regional Development
RPA	Rural Planning Act
RPMIS	Rural Planning and Management Information System
RS	Remote Sensing (air- and space borne)
RUF	Rural-Urban Fringe
S.B.	Government Gazette of Suriname
SAIS	Agricultural Information System Suriname
SBB	Foundation for forest management and forest control
SDB	Spatial Database
SIS	Soil Information System
SLUP	Sound Land Use Planning
SMS	Settlement Main Structure
SOZAVO	Ministry of Social Affairs and Housing
SPEV	Spatial Evaluation
SPMS	Spatial Main Structure
SS	Support Structure
STINASU	Foundation for Nature conservation
SWOT	Strengths, Weaknesses, Opportunities and Threats
TM	Thematic Mapping or Thematic Mapper (<i>a sensor of the Landsat group of satellites</i>)
TOR	Terms of Reference
UPA	Urban Planning Act
WWF	World Wildlife Fund

Executive Summary

Dit rapport presenteert de uitkomsten van een studie welke is gedaan om de overheid te ondersteunen in haar inspanningen om de uitdagingen van “Land Use Planning” het hoofd te bieden. Dit initiatief van het onder-Directoraat Ruimtelijke Planning van het Ministerie van Ruimtelijke Ordening, Grond- en Bosbeheer dat wordt ondersteund door het World Wildlife Fund beoogt een breed gedragen, geïnstitutionaliseerd platform te creëren voor *Sound Land Use Planning* (SLUP) in Suriname.

Bij *Sound Land Use Planning* gaat het om een participatieve, inclusieve, ruimtelijk en sectoraal geïntegreerde benadering met doelgerichte aandacht op het voorkomen van land degradatie en behoud van biodiversiteit. In de kern is het doel van grond gebruik planning om essentiële locatie behoeften van grondgebruiksactiviteiten te vervullen. Door een chronisch gemis aan gestructureerde, systematisch uitgevoerde planning zien de ruimtelijke patronen van actief grondgebruik er somber uit; uitgifte van overlappende mijn- en bosbouw concessies, dubbele uitgifte van Domein land, gebrek aan structuur-, en bestemmingsplannen, en zelfs landdegradatie in beschermde gebieden illustreren dit. In hoofdzaak zijn er twee belangrijke achterliggende redenen die daaraan significant bijdragen. Deze betreffen enerzijds de reeds gedurende decennia voorkomende ongebreidelde grond allocaties, waardoor waarschijnlijk een heel groot deel van het Kustgebied niet planmatig is uitgegeven. Anderzijds zijn het de ook decennia lang uitgevoerde, verkavelingen in een grote variëteit aan soorten en maten. Daardoor is de planruimte beperkt en wordt het mogelijk een moeilijke opgave om grond gebruik planning de gebruikelijke, significante faciliteerder voor economische ontwikkeling te doen zijn. Gegeven het aantal rechtszaken tegen de Staat, blijkt dat deze situatie alleen maar verergerd¹. De regering is zich ervan bewust dat deze situatie stremmend werkt op de duurzame ontwikkeling van het land.

Dit rapport is opgesteld middels een analyse van informatie verkregen uit van desk research, overleg en veldoriëntatie bezoeken. De opdracht werd onder meer vertaald in taken om knelpunten die SLUP belemmeren naar aard te benoemen en geschikte mogelijkheden voor SLUP en condities die vervuld moeten zijn om SLUP operationeel te maken, te identificeren. Onderzoek werd onder meer verricht door middel van het enquêteren van ambtenaren van Ministeries en Districtscommissariaten. De informatie welke uit deze enquête naar voren is gekomen is in een SWOT analyse verwerkt. De analyse geeft inzicht van de huidige situatie met betrekking LUP institutionele structuur, inclusief de tekortkomingen en punten voor verbetering. Een lijst van geraadpleegde personen en organisaties die hebben deelgenomen aan de enquête zijn bijgevoegd als bijlage 1. Tevens is een vergelijkende studie is gedaan naar de LUP situatie in Caricom landen, waarbij lering getrokken kan worden bij de aanpak van SLUP in Suriname. Middels een voorgestelde *road map* is getracht een stappenplan te ontwikkelen om te geraken tot *Sound Land Use Planning* voor Suriname. Informatie voor het rapport is deels gehaald uit eerdere rapporten welke zijn opgenomen in de referentie lijst(zie bijlage 2).

De uitkomsten van enquêtes, maar meer nog (waar mogelijk) van daaraan gerelateerde gesprekken met districtsautoriteiten hebben geleid tot een aantal interessante en hoopgevende conclusies betreffende de weg waarlangs SLUP het best kan worden geïmplementeerd en de wijze waarop. Maar ook werden bekende en persisterende juridische, organisatorische, procedurele, institutionele en inhoudelijke *land use planning*

¹ De Ware Tijd, “300 rechtszaken aangespannen tegen RGB”, d.d. zaterdag 3 augustus 2014.

problemen bevestigd. Daarnaast leverde het onderzoek nieuwe feiten op over juridische knelpunten die SLUP-implementatie in de nabije toekomst kunnen belemmeren en nieuwe inzichten over zowel ruimtelijke beperkingen als mogelijkheden voor actief en passief grondgebruik.

Enkele algemene conclusies welke uit deze studie zijn voortgevloeid zijn:

- Dat het huidige institutionele en juridisch raamwerk voor LUP in Suriname thans niet effectief is, het is fragmentarisch en functioneert op ad hoc basis. Echter kan het als vertrekpunt worden gebruikt voor het ontwikkelen van een geactualiseerd, verbeterd en geharmoniseerd kader voor LUP in Suriname;
- belangrijke knelpunten voor LUP in Suriname zijn het gebrek aan coördinatie tussen plan instituten, overlappende taken en gebrek aan wetgeving. Daarnaast vormen de centrale oriëntatie van opeenvolgende regeringen, het gebrek aan oprechte interesse in de ontwikkeling van het platteland en het ontbreken van een faculteit voor Geo- of ruimtelijke wetenschappen blijvende obstakels;
- Een grote leemte in de huidige LUP wetgeving is het ontbreken van planwetgeving voor de rurale gebieden in Suriname;
- Het Ministerie van RGB is een geschikt ministerie om een coördinerende functie te vervullen op het gebied van LUP vanwege de synergie tussen de huidige taken en de LUP functies;
- Er bestaat een groot gebrek aan ruimtelijke gegevens en informatie welke dringend moet worden opgeheven. Capaciteitsopbouw van betrokken personeel in hedendaags onderzoek en data-analyse methoden (GIS en remote sensing) is essentieel voor SLUP;
- Publieke participatie is een essentieel onderdeel in het LUP proces welke het draagvlak en naleving door de gemeenschap voor implementatie vergroot
- Ook in de Caricom landen is LUP ontwikkeling niet altijd zo vlekkeloos verlopen. Suriname moet leren van de ervaringen c.q fouten van deze landen.

Onderstaand enkele algemeen geformuleerde aanbevelingen uit de studie:

- Aangezien verschillende overheidsinstanties belast zijn met het uitvoeren van verschillende LUP functies, is het noodzakelijk om een coördinatiestructuur ontwikkelen om ruimtelijke ordening activiteiten te synchroniseren;
- Alle relevante instanties zullen betrokken moeten worden om te komen tot een geharmoniseerd kader voor LUP;
- Overlappende taken zullen geëlimineerd moeten worden, administratieve inefficiëntie en duplicatie van werk en conflicterende situaties moeten beperkt worden;
- Capaciteitsversterking van de verschillende betrokken instanties zal moeten plaatsvinden op het gebied van regionale ruimtelijke ordening als ook data analyse methoden.

- Het is essentieel dat ondersteuning wordt gezocht voor LUP op zowel politiek als beleidsniveau.

1 Introduction

1.1 Background

Over the past decades, economic developments have created a proliferation of competing demands on the rich natural resources in Suriname parallel with world-wide trends in population increase, food security issues and climate change impacts.

The situation with regard to land use in Suriname is far from rosy. Land use planning is characterized by the issuance of overlapping mining and forestry concessions, double issuance of Domain land, lack of structure, planning and zoning plans, and even land degradation in protected areas. It has even happened that privately owned land has been issued to other persons under the title of land lease. These cases have been playing for decades, and the situation is growing worse. Currently, there are about 300 lawsuits running against the State². The government is aware that this situation hampers sustainable development of the country, and that they must change it.

The Government expresses the need for spatial planning of its territory in the Development Plan 2012-2016. It is Governments priority intention to develop updated legislation for spatial planning. It is stated in the Development Plan that a clear view on the country's future spatial developments will have to be captured in structured zoning plans to counteract the current unplanned proliferation of land use for economic development (mining, forestry, industry and agriculture) and housing. However, these measures cannot be characterized as involving the forward-looking process of land use planning, as reflected in the FAO definition which defines land use planning as a "systematic assessment of land and water potential, alternatives for land use and economic and social conditions in order to select and adopt the best land-use options, with a purpose to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future."

The spatial planning function, inherently including land use planning, has been placed under the Ministry of Spatial Planning, Land and Forest Management (RGB), based on its conformation in September 2005. Planning is to be implemented in collaboration with among others the Ministries of Regional Development (RO), Public Works (OW), and Natural Resources (NH) and Finance (as the successor of PLOS with regard to national planning). The Ministry of RGB is responsible for carrying out technical functions; such as granting parcels for land uses (e.g) residential and industrial parcels, forest concessions as well as agricultural land after being advised by the respective sector ministries. Its sub-directorate is in charge for the development of sound spatial planning In Suriname. With the establishment of the Ministry of RGB, management, land-related policies and planning should, in theory, be effectively coordinated by one authority. Unfortunately, the current legal framework established within the 1973 Planning Act and the 1972 Urban Development Act restricts the effectiveness of the Ministry with overlapping authority. In the absence of a clear legal framework, ad-hoc commissions have been established to provide advice on solutions to land-related problems. The concepts for an organogram, task setting, staffing requirements and related job descriptions have recently been finalized. Since its establishment, the sub-directorate is

² De Ware Tijd, "300 rechtszaken aangespannen tegen RGB", d.d. zaterdag 3 augustus 2014.

allocating certain areas based on best practices and economical, sociological and environmental assessments anticipating to a more rigid reference framework.

WWF Guianas wants to support the government in its intention to cope with the challenges of sound land use planning, which is considered a priority area in WWF Guianas general mission to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature. WWF recognizes that land use planning is still in its immature phase in Suriname and that information on the main players in the field is fragmentary.

This short term technical assistance report has been conducted under the land use planning and protected areas component of the WWF Guianas strategic programme 2012-2016. Funding for this strategic programme is secured through two different but complementary programs with financial support from WWF-NL, WWF-Belgium and the Dutch Embassy in Paramaribo.

1.2 Objectives

The project objectives are as follows:

1. To collect and analyse baseline information on the status and future of sound land use planning in the northern half of Suriname (young and old coastal plain, savannah belt), including a stakeholder analysis (identification of stakeholders and their interests/position/views, experiences, levels of interaction with others, (potential) roles, legislation and existing plans/maps).
2. To identify the gaps and challenges for sound land use planning in the northern half of Suriname, with a focus on important themes such as capacity building, coordination, institutional strengthening and priority setting.
3. To conduct a quick scan analysis for sound land use planning in the southern part of Suriname in line with the analysis for northern Suriname.
4. To identify useful best practices and lessons learned of sound land use planning in countries similar to Suriname.
5. To develop a roadmap (work plan) to support the sub-directorate of Spatial Planning of the Ministry of RGB, in close cooperation with the other ministries and the Government of Suriname, in sound land use planning in the northern half of Suriname, using a participatory multi-stakeholder approach. This roadmap has to make clear which steps should be taken to develop a sound land use planning, using a priority setting framework and a systematic approach with activities, coupled to a planning with tentative budgets, potential partners and donors.
6. To draft an outline of a workshop on sound land use planning in Suriname to present the results of the consultancy to a wider public and to facilitate the implementation of the roadmap

1.3 Scope of Work

According to the Terms of Reference (TOR), the assignment is carried out by a consultancy team, e.g. (at least) including one local and one international consultant, each with their own national and/international expertise in stakeholder analysis and land use planning, including legislation, policy and mapping. The

Team was comprised of two technical and one legal expert and agreed the planning and division of the work as outlined below.

Under the guidance of WWF Guianas and the sub-directorate of Spatial Planning of the Ministry of RGB, the consultants have conducted the following tasks.

Table 1: Tasks consultants SLUP

Tasks	Responsible consultant
<i>The consultant has designed questionnaires, organized interviews with all stakeholders identified as relevant for sound land use planning in Suriname, including ministries, district authorities, institutions, NGOs and research expert, analysed results (SWOT), evaluated the impact on SLUP approaches and procedures and their incorporation in feasible options for SLUP practice</i>	Henk Lutchman
<i>The consultant has reviewed the existing legislation, policy and policy practices identified as relevant for sound land use planning in Suriname and has formulated points for improvements (update)</i>	Nancy del Prado
<i>The consultant(s) have collected additional information in and outside Suriname by analysing the already existing (potential) land use maps, (policy) documents, best practices and strategy papers</i>	Christine Toppin-Allahar Henk Lutchman
<i>The consultant(s) have, based on the information collected, developed a roadmap (work plan) for sound land use planning in the northern half of Suriname with recommendations for the southern part</i>	Nancy del Prado, Henk Lutchman Christine Toppin-Allahar

On April 28, 2014, a work plan was submitted and approved by WWF and the Ministry of RGB. On July 18, 2014 a presentation was held for the Ministry of RGB and WWF Guianas to present the status on the project.

A Mid Term report was submitted on August 7, which provided a baseline of all data gathered during the desk research and interviews with stakeholders. This data gathering is included in this final report. This report includes baseline information as well as a roadmap (proposal) for sound land use planning in the northern half of Suriname with recommendation for the southern part.

1.4 Methodology

This report has been prepared based on the analysis from desk research, consultations, field orientation visits and surveys. As required by the ToR, the consultants organized interviews with stakeholders relevant for sound land use planning in Suriname. For efficiency reasons the consultants decided to develop questionnaires for the different ministries and government institutions as well as local government in order

to do an assessment of the existing situation on LUP as well on the gaps and needs for improvement. A list of persons consulted and organizations participated in the survey are attached as Appendix 1. In accordance with the ToR, the existing legislation, policy and policy practices were reviewed and points for improvements were formulated. The report also draws from previous reports on studies which are included in the list of references (see Appendix 2). Because of the specific land use planning situation encountered and particularly related to the substantive and methodological aspects of LUP, expert visions are included for eventual further elaboration upon (whenever required or judged to be useful).

1.5 Structure of the report

This report is comprised of three major components. First, the background on the project in chapter 1. Chapter 2 elaborates on the current practical situation with regards to land use planning in Suriname within the policy and regulatory framework, including an inventory of land use planning initiatives in the country. Chapter 3 provides a brief overview of the spatial structure of the country. In chapter 4, an overview of lessons learned in land use planning within the CARICOM countries is provided, with a specific focus on the neighbouring country Guyana. Chapter 5 provides recommendations for a frame to develop a shared vision towards sustainable land use planning. In chapter 6, a recommendation is made for a Road Map towards land use planning, taking into consideration the information of the previous chapters. The report ends with preliminary conclusions and recommendations³.

³ These conclusions and recommendations are at this point considered preliminary, as the consultants expect to incorporate feedback from the stakeholders workshop which will be held after submission of this report.

2 Situational analysis of LUP in Suriname

2.1 Policy Framework

The legal foundation for development planning is found in the Suriname Constitution. In accordance with article 40, a Development Plan (OP) shall be determined by law, taking into consideration the national and socio-economic goals of the State. This plan is intended to be no more than a guideline for government policy.⁴

- *The government acknowledges that spatial planning is needed for responsible use of the land.*
- *It is a priority of the government to develop updated legislation for spatial planning. This will provide the government the authority and the obligation to direct spatial planning*
- *The government will implement spatial policy through zoning plans. Zoning plans will be the policy vision of the government for future spatial development for a certain area. Both Government as well as citizens will have to obey to these plans.*
- *Planning of land and natural resources will be concretised within zoning and structural plans*
- *Regional and zoning plans will consider physical development opportunities and social, cultural and economic circumstances of the area.*
- *The GLIS project is an important foundation for sound spatial planning, especially in terms of the uniformity of the accuracy of geographic information. The digital land information will be used as the basis for developing regional, structure and zoning plans as well as monitoring of projects.*

Government Statements on Spatial Planning contained in the Development Plan 2012-2014

The Government is aware of the shortcomings in spatial planning and has therefore formulated specific policy objectives to address this issue. This is apparent in the following statements in the current OP:

It is stated in the OP 2012-2016 that commercial exploitation is an important condition for national development planning and that the pillars on which the diversified economy is based, are agriculture, animal husbandry, fisheries, and forestry and the mining and its sub sectors bauxite, hydro carbons and gold.

In this respect, the OP explicitly emphasizes that spatial planning is the basic condition for sustainable development of the agricultural sector. The OP further states that the primary objective of Suriname's environmental policy is to exploit the abundant potential of the country's natural-physical environment for the wealth of the country and for the welfare of the people in perpetuity. In this exploitation of the natural potential, the Government will continue to ensure a prudent and sustainable management of the Country's natural environment through protection measures and mitigating environmental damage, without making more restrictions than necessary, so that sufficient and healthy living conditions for sustaining life are intact.

⁴ Ontwikkelingsplan 2012-1016, p. 7

Both the land rights issue of the indigenous and maroon communities and the issue of undivided land (which is explained in section on Gaps and Challenges) hinder proper land use planning. The government also specifically addressed these issues in the OP and has given priority to resolve these issues. In the context of solving the land rights issue, the Government organized a national land rights conference in October 2011. However, this conference failed and the President referred the matter to the National Assembly. It is not clear whether within the term of the current OP a solution will be brought for the issue of undivided land.

2.2 Legal Framework

The current legislation relating to land use and land use planning is scattered across various laws and regulations administered by different ministries and government agencies. The planning legislation dates back to the colonial period, while the legislation relating to the use and management of land and natural resources was adopted after independence.

2.2.1 Land use planning legislation

The current legislative regime for land use planning consists of the **Planning Act 1973** (Planwet, S.B. 1973 no. 89), the **Act on Regional Bodies** (Wet Regionale Organen S.B. 1989 No.44, zlg. bij S.B. 2002 no. 54.), both related to national and regional land use planning, and the **Urban Planning Act 1972** (Stedebouwkundige wet G.B. 1972 no. 96, S.B. 1982 no. 94, zlg. bij S.B. 2002 no. 72), and the **Building Act 1952** (Bouwwet, G.B. 1956 no. 30 zlg. bij S.B. 2002 no. 72), related to urban land use planning.⁵

The **Planning Act** and the **Urban Planning Act** set out a strategic framework for zoning and land use planning. Unfortunately, land use planning in Suriname is currently a dilemma. No national spatial planning is taking place, no regional land-use plans and Structure Plans or zoning plans are being made, while they are considered an absolute necessity. This creates difficulties when sector ministries require land on suitable or preferred locations for a certain development priority. The **Act on Regional Bodies** provides a framework for planning at the regional level.

The Planning Act

Although the **Planning Act** dates from the colonial area, it can be considered innovative and future oriented. The line of thought behind the Planning Act is that spatial planning of land use should be central in national and regional development planning.

The Act was promulgated in 1973 but is not operational, because the organizations involved in the planning procedure are not in place. The organizations that are involved in the planning procedure are defined in article 1 of the Planning Act. These are the Ministry responsible for National and Regional Planning, the Plan Coordination Commission and the Planning Council and the Independent Community. Currently, the Minister in charge of National and Regional Planning (Minister of Finance) is currently responsible for development planning, and the National Planning Office (*Stichting Planbureau Suriname*) exists and is operational. In accordance with article 2 (4), the Minister should consult the board of the Independent Community during the preparation of the development policy for Suriname. The aforementioned

⁵ Buursink, SLMP – Diagnosis of Land Management Issues, 2002, p. 15.

community can be considered as the local administrative body at that time. Although the term “Independent Community” refers to the Constitution in force in 1973, a period during which the Central Government dominated, it was included with a view to the intended administrative decentralization. When the Planning Act was promulgated, the District Water Boards already existed and were considered “Independent Communities” fall under this. At present the decentralized government is in place and functioning in accordance with the provisions of the Constitution now in force. Although there were no transitional provisions regarding these independent communities, the local government are now considered to have taken role of the “Independent Community”. The role of the local Government in development planning will be further elaborated in the paragraph on the Act on Regional Bodies.

The consideration underlying the Planning Act was to provide directions with regard to national and regional planning in the interest of sound spatial planning. As mentioned in the explanatory memorandum, the guiding idea behind this act was that development planning should be based on survey and research aimed at optimal future policy, whereby efficient planning of land use will be a central element.

The Act consists of 6 chapters: Chapter 1 deals with definitions; Chapter II with the national and regional policy; Chapter III with indemnification; Chapter IV deals with the planning system (planning bodies); Chapter V with compulsion and penal provisions, and Chapter VI with closing provisions.

It is noteworthy to mention that the National Planning Office has initiated to draft a new Act on Planning and Spatial planning (version December 2012)⁶. According to the explanatory note, the draft must provide for a frame for systematic and coordinated preparation, determination and implementation of policy decision. The draft must provide for a foundation for planning, whereby it is necessary that the sector legislation adjusted to the law on planning and spatial planning.

Together with the *Planning Act, the Act of June 13, 1973* (G.B. 1973 no. 90) containing rules regarding the legal form and organization of the National Planning Office was promulgated. The latter was an implementation of article 19 (2) of the *Planning Act*. The aim was to secure the position of the National Planning Office as independent advisory organ of the Minister responsible for Planning. Over time, national and regional planning was administered by different ministries. As the Ministry of Finance was tasked in 2010 with national planning and the integration of sector and regional plans and programs in the national plan, one would assume that this Ministry is responsible for the implementation of this plan. However, in 2012, the Statutes of the National Planning Office were amended stating that the NPO comes under the Cabinet of the Vice President. It is noteworthy mentioning that the Act regarding legal form and organization (G.B. 1973 no. 90) explicitly stipulates in article 3 that amendments to the Statutes can only be made after having heard the Planning Council. Even when the government decides different, the decision has to be notified to Parliament accompanied with an advice from the Planning Council. Either way the advice of the Planning Council, which is non-existent, is required.

⁶ This version of the draft planning and spatial planning Act was provided by Mr. J. Bouterse (Sub Director Spatial Planning and Environment) of the NPO. It was not discussed in broader context.

The Urban Planning Act

At present, the *Urban Planning Act* ought to play an important role to prevent undesirable urban developments. Paramaribo and other residential areas (*woongebieden*), are expanding at a rapid rate, while other urbanized areas still don't have the legal status of urban area. All these areas are expanding chaotically and the problems are manifold, because this Act has never been implemented and therefore failed to establish spatial planning in urban areas⁷. This Act contains procedures for the development of structure and zoning plans. Also this Act only provides regulations for subdivision in areas designated as urban area for which a Structure Plan is enacted. The Ministry of Public Works is responsible for implementation of this law. The *Urban Planning Act* applies only to urban areas identified by State Order including Paramaribo, Nieuw Nickerie and Apoera. The considerations underlying the *Urban Planning Act* are to regulate the structure and designated land use of urban areas. The current government started the process to expand the scope of the Urban Planning Act in order to address the uncontrolled growth of ribbon development in non-urban areas. A new State Order⁸ to designate Commewijne, Wanica and Para and primary roads category A as urban areas has recently been promulgated. Through this State Order, the districts of Commewijne, Wanica en Para are designated as urban area as well as an area of five (5) kilometres on either side of the axis of designated primary roads category A as well as projected primary roads. It is stated in this State Order that the way of life of the communities living in the Interior will be respected. According to the Explanatory note of the State Order this extension of urban areas was necessary since formation of settlements and urbanization occur beyond the borders of the existing designated urban areas. With the extension, spatial planning of these urban areas by Government is made possible.⁹

The Districts of Commewijne and Wanica are seen as urban expansions of Paramaribo, while urbanization in Para is increasing. Para is in a development phase which is aimed at centre formation, tourism, agriculture and industry. Urbanization extends along primary roads . These roads have a gravitational pull on construction activities by individuals that are not desirable in the context of spatial planning. This State order will provide that undesired formation of settlements and ribbon development can be prevented.

The Act consists of 8 chapters: Chapter 1 deals with definitions; Chapter II regulates Structure Plans and Chapter III Zoning plans; Chapter IV deals with subdivision and Chapter V with indemnifications; Chapter VI deals with compulsion and penal provisions while Chapter VII deals with Amendment of certain laws. Chapter VIII deals with the closing provisions.

Article 1 (4) stipulates that there is an Interdepartmental Coordination Committee for Development Planning in Suriname. It is important to emphasize that it is not the same Inter departmental Advisory Commission as mentioned in the *Planning Act*. Based on this article, a State Order containing the Rules of Order of the Coordination Committee for Development Planning (G.B 1973 no. 88) was promulgated. The composition and tasks of the Committee were determined. According to the State Order, the Committee should be comprised of 2 representatives of the Ministry of Public Works (Secretary and Chair of the Committee), 1 representative of each of the Ministries of Agriculture, Education, Justice and Police and Finance. The task of the Committee was to provide the Minister of Public Works with advice regarding

⁷Buursink, Diagnosis of Land Management Issues, 2002.

⁸ S.B 2014 no. 89

⁹ Personal communication with Ms. Lilian Krishnadath, Head of the Sub-Directorate Spatial Planning of the Ministry of Public Works

structure and/or land use plans, and to include the activities and plans of the concerned ministries at the structure and land use plans. This committee never functioned and was abolished. The absence of this Coordination Commission, which is required by law, hampers implementing the Act.

The Building Act

The *Building Act* provides stipulations for the application procedure for building permits. Since its promulgation, the scope of Building Act was limited to Paramaribo and residential areas under the Urban Planning Act. In 2010, an expansion took place, and the Building Act became applicable for the whole of Suriname with the provision that the way of living of the inhabitants of the interior is to be respected. The Act will be applicable for establishments of structures in the interior that have greater capacity than 15m³ and a height greater than 2.5m and nail fixed structure.

The Act on Regional Bodies

This act regulates the organization of local government. The power and operating procedures of the representative bodies (District and Resort Councils) and administrative organs are regulated, as well as the procedure for the realization of local regulations (*districtsverordeningen*) and planning. The Act on Regional Bodies provides the District Councils with the responsibility to establish annual district plans that fit within the framework of the National Development Plan. In drawing up these plans, full account must be taken of the resort plans. The District Councils are authorized to be represented at the deliberations for the formulation of the national plans by the Development Body for National Development. They will have an advisory vote.

Annex 1 provides an overview of the gaps and constraints in the land use planning legislation previously briefly elaborated.

2.2.2 Land management legislation

Beside the Land use planning legislation also land management legislation will have an impact on land use practices in Suriname. Judicious land use planning together with careful land administration will generally lead to effective land management which is an essential prerequisite for sound national development¹⁰.

The legislative regime for land management in Suriname consists mainly of fragmented pieces of legislation regulating the issuance of land and use of natural resources as well as protection. Annex 2 provides an overview of the interrelationship with land use planning and the identified gaps and challenges.

In general, the review revealed that the laws relating to the issue of land, the use of natural resources and the protection of natural resources are indeed related to land use planning. However, it appears that there are some gaps, shortcomings and inconsistencies in the law.

The review showed that some of the legislation even has their own land use planning scheme such as:

¹⁰Buursink, Diagnosis of land management issues, 2002.

- the Forest Management Act, by designating different types of forest, which should be in conformity with national and regional plans
- the Mining Act, by designating areas for small scale mining
- the Hindrance Act, by designating streets, neighbourhoods, towns and cities where facilities are not allowed to be established or where no hindrance permit is required. This designation should not be in conflict with a zoning plan under the Urban Planning Act.

It is noteworthy mentioning that the protected area legislation establishing nature reserves and designating special management areas (MUMA's) provides for designating land for protection purposes, but does not even refer to national or regional land use plans. This may, cause conflicts of interest when actually developing land use plans.

In practice often conflicting situations arise between different type of land users due to the fact that the laws are not aligned. For example, it often happens that logging concessionaires are saddled with mining right holders that need to cut the trees to win minerals

In general it can be stated that the current land management legislation to a certain extend support land use planning, while another part creates conflicting situations.

2.2.3 Gaps and challenges

The legal review in annex 1 and 2 is not a comprehensive evaluation of the existing legal framework, but has attempted to throw some light on gaps and challenges within the legislation that pose a threat to sound land use planning. Some specific gaps and challenges in the existing legislation have been briefly highlighted. These are not repeated here in detail but should be considered as essential elements when developing a legal framework for sound land use planning.

- The indecisiveness of successive governments to implement the **Planning Act** since its promulgation; The planning bodies, which are a prerequisite for the implementation of the Act have not been formalised and through the years, development plans have been developed without proper implementation of the stipulations in the Planning Act.
- The very poor implementation of the **Planning Act** reflects the poor sectoral zoning activities; Issuance of Domain land under L-Decrees and zoning of forest are required to be implemented in accordance with national and regional plans. However, to date these plans are absent.
- Poor implementation of the **Urban Planning Act**; There are no binding structure and zoning plans. As a result urban development is mainly determined by the issuance of parcelling licences to private landowners.
- The **Urban Planning Act** lacks a transparent procedure as well as criteria or indicators to designate residential areas, structure and zoning plans. It is left to the discretion of the minister.
- A major gap in the legislation is that parcelling in non-urban areas is not regulated, which leads to fragmentation of parcels, unauthorised changes in land use and sub-standard land development schemes with poor layout design and lack of adequate physical and social infrastructure with all its consequences.
- Even though certain sectoral legislation provides for zoning opportunities, the lack of coordination between responsible ministries/departments results in overlapping and conflicting activities.

In addition to the above, there are a number of unresolved issues which are also stagnating land use planning:

1. The absence of an overarching environmental Act forms a major gap within the legal framework. The current environmental legal framework is poorly developed, fragmented and dispersed among different pieces of legislation, and lacking coordination and enforcement. The absence of ESIA requirements in the existing sectoral legislation is serious bottleneck for sound land use planning. The lack of pollution standards and requirements for rehabilitation further contributes to poor land use management and planning in the country.
2. The unresolved issue with regards to maroon and indigenous rights also pose a threat to land use planning; despite the fact that their existence predates the establishment of the colonial and post-colonial state and that the government has explicitly recognized their political autonomy in peace treaties at different time in history (Ellen-Rose Kambel 1999), their fundamental rights are not sufficiently protected by the sectoral legislation and even invisible in the Constitution.
3. The issue of undivided estates (*boedelprobleem*) is also one that hampers adequate land use planning. According to Surinamese succession laws there is an undivided estate when there is more than one successor to the estate. The Civil Code stipulates that all successors have equal rights to all elements of the land. This means that there is no specific part of the land that can be claimed by a certain successor. The estate has to be divided equally between all successors and all successors have equal rights to the use of the land and its profits. In most cases, not all successors live near the land. Many of them live abroad and it is almost impossible to identify all successors. This problem is compounded with every generation that succeeds to undivided shares in the property, which makes the division of the land much more complex. For this reason land cannot be divided properly. This often results deterioration of properties or abandonment of land. The government acknowledges that it is almost impossible to start up the process of dividing or diminishing the matter of undivided property and therefor decided to establish a national Committee to solve this issue.

2.2.4 Points for improvement

- When developing new legislation for land use planning it is important that existing laws and regulations are being aligned. The new legislation should foster coordination in attuning of sectoral plans with regional and national plans.
- When developing new laws and updating current laws, a clear distinction should be between roles and responsibilities of respective government agencies involved in land use planning and development planning.
- A transparent procedure to develop the so called national, regional, structure or zoning plans, including criteria or indicators to designate areas should be developed.
- A rigorous and transparent procedure for Public Participation should be included in land use planning processes.
- A more pertinent role for local government should be considered in land use planning processes.
- Strategic Environmental Impact Assessment should be mandatory for developing land use plans.
- The unresolved issues of land rights of indigenous and maroon communities and undivided estates should be considered when developing land use legislation.

2.2.5 Other relevant initiatives of the Government

In recent years, successive governments have taken initiatives to draft legislation to protect the environment and management of the coastal zone. Adoption of these laws would certainly contribute to sound land use planning in Suriname. A brief elaboration will be given of these laws, which are of relevance to land use planning:

- In 2002 a draft Framework Act on Environmental Management was established and revised several times. It is noteworthy to mention that in 2008 the draft Act was presented to the Council of Ministries but it was not approved. Therefore the formal procedure for submission to Parliament was never initiated. In the draft version of 27 November 2013, it is stipulated at least once every four years a national environmental policy plan be drafted. The plan amongst others address the designation of areas in which the quality of the environment or one or more of its elements requires special protection, the risks of climate change on the national planning process and on policy plans, as well as the precautions required to adjust for the effects of climate change, including appropriate and integrated plans for managing and protecting coastal areas. In addition, the Act give effect to the Environmental Assessment guidelines. These guidelines were prepared in 2005 with an update in 2009 as a guide for project developers, but are also intended to provide Surinamese government officials with guidelines when evaluating and assessing the adequacy and suitability of ESIA reports submitted in support of project permit applications. The draft act also provides for provisions to control pollution. Adoption of this Act is an essential prerequisite for sound land use planning, since land use has a considerable impact on the environment. Conversion of natural and productive land to human use, sprawling patterns and inappropriate location of development, road and building construction and land use practices after development, all have broad impacts on human environmental health and the natural environment.
- In 2009, the Government of Suriname carried out an Integrated Coastal Zone Management (ICZM) Project, inclusive of the development of an ICZM Plan for Suriname and the implementation of an ICZM Pilot Project covering the Greater Paramaribo area. A review of the legal and institutional framework for ICZM in Suriname carried out as part of this ICZM project revealed that, although some of the existing laws of Suriname contain provisions which are relevant to ICZM and some Governmental Organisations have powers with respect to various matters affecting the management of the Coastal Zone, major legal and institutional reforms are necessary for achieving ICZM in Suriname. In this light, a Law was drafted, which makes new legal and institutional arrangements for the management of the Coastal Zone in Suriname. It is designed to provide the basis for ICZM, including the legal framework for the adoption and implementation of the ICZM Plan.

The link with Land use planning is evident as this draft act provides amongst others for:

- for the adoption of a holistic policy with respect to the conservation and sustainable management of the Coastal Zone;
- adoption of an integrated management plan to provide specific guidance for the conservation and sustainable management of land and marine areas within the Coast;
- facilitation of closer coordination and the resolution of potential conflicts between Governmental organizations with respect to their sectoral activities in the Coastal Zone;

- enhancement of knowledge with respect to the natural features and the effects of natural processes and human interventions in the Coastal Zone
- inclusion of major national and local stakeholders in the process of decision-making with respect to the Coastal Zone
- Etc.

The Ministry of RGB is responsible for following-up on the aforementioned project deliverables.

- The project ‘Suriname Coastal Protected Area Management’ is being executed by the Ministry of RGB with financial support from the GEF. The project goal is to safeguard Suriname’s globally significant coastal biodiversity. The project objective is to promote the conservation of biodiversity through improved management of protected areas along the nation’s western coast. As part of the project, three management plans have been drafted. These draft plans incorporated coastal protected area zoning, identifying core areas, buffer zones, and appropriate economic use areas. Due to the absence of national land use planning, this proposed zoning should be seen as a self-contained zoning.

As the aforementioned drafts will play a supportive role in sound land use planning, it is recommended to expedite the process to enact these draft laws.

2.3 Institutional Framework

2.3.1 Introduction

The legal basis for the institutional framework for land use planning is formed by the legislation discussed in the previous chapter as well as the State Order Task Description Departments (S.B. 1991 no. 58, as lastly amended by S.B. 2010 no. 124).

The spatial, land-use planning function has been placed under the Ministry of Spatial Planning, Land and Forest Management (RGB), based on its conformation in September 2005. Spatial planning is to be implemented in collaboration with a.o. the Ministries of Regional Development (RO), Public Works (OW), Natural Resources (NH) and Finance (as the successor of PLOS with regard to national planning). The Ministry of RGB is responsible for carrying out technical functions, such as the granting of residential and industrial parcels, forest concessions as well as agricultural land after being advised by the respective sector ministries. Its sub directorate is in charge for the development of sound spatial planning In Suriname. With the establishment of the Ministry of (RGB) management, land-related policies and planning should, in theory, be effectively coordinated by one authority. Unfortunately, the current legal framework established within the 1973 Planning Act and the 1972 Urban Development Act restricts the effectiveness of the Ministry with overlapping authority. In the absence of a clear, legal framework, ad-hoc commissions have been established to provide advice on solutions to land-related problems. The concepts for an organogram, task setting, staffing requirements and related job descriptions have recently been finalized.

The obstacle of overlapping competencies of ministries finds its origin in the antiquated but still effective laws in combination with new insights of Government to institutionalize spatial planning.

Under the Planning Act 1973, the NPO is in charge of national development planning including related spatial development. Effective planning in the spirit of the law never took place; Plan organs were not established and national development plans were never binding for government bodies and the corresponding spatial planning as required by the Planning Act has never taken place. This also had an effect on the sectoral spatial planning which never got off the ground. A number of sector laws (f.e. L2 Decree and Forest Management Act) stipulated that sector zoning had to be done in accordance with existing regional and national plans. However, these were absent.

The Urban planning law dates from the same period as the Planning Act and gives the responsibility for the spatial planning in the urban areas to the Ministry of OW. Pursuant to this law, structural and zoning plans should be made. These have not got off the ground. This law applies only to urban areas, eliminating the non-urban area regulated.

By charging the Ministry of RGB in 2005 with the responsibility for proper spatial planning, direction was given to address the shortcomings within the current legal and institutional framework.

Considering integrated spatial planning, currently four main government institutions are involved in development planning. The following table provides an overview of technical levels of spatial planning functions and existing planning functions in Suriname.

Table 2 Technical Scale levels of spatial planning & existing planning powers in Suriname

Level of Spatial or Development Planning	Existing Agency/Law			
	RGB	NPO	OW	RO/DC
	Task description	Planning Act	Urban Planning Act	Act on Regional Bodies
National	Sound spatial planning in dialogue with a. o. the Ministry of LVV, RO, NH and OW ¹¹ Land allocation (<i>Bodembestemming</i>)	National Development Programme		
Regional		Regional Development Programme		District Plans
Local		Designation of: <ul style="list-style-type: none"> • Development Areas • Residential Areas • Special Controlled Areas 	Structure Plans for Urban Areas Land subdivisions and land subdivision Plans proper for housing (restricted to urban areas)	Resort Plans
Neighbourhood			Land subdivisions and land subdivision Plans proper for housing (restricted to Urban areas) Urban re-development plans	
Parcel			Urban Neighbourhood Improvement Plans	

The table above gives an overview of the laws providing responsibilities to certain government bodies for different levels of Planning. The responsibility of the Ministry of RGB is based on the State Order, while the NPO got its mandate by an Act of Parliament. A State Order is lower in hierarchy than an Act of Parliament, which will only play a role when provisions of these laws are contradicting. As mentioned earlier, the NPO is responsible for preparation of the Development Plan. Although, in accordance with the

¹¹ Although the Ministries of LVV and HI are not specifically mentioned, they are also very important ministries to be involved in spatial planning why not included above??

Planning Act, spatial development should have been a substantial element in development planning, the past National Development Plans had more of a socio economic nature.

The NPO¹² sees its role as an umbrella organization defining the contours for spatial planning, leaving the coordination of the implementation of spatial planning at the Ministry of RGB. In this light, staff have been trained in GIS. It is planned for a GIS unit to be set up at the NPO. In the opinion of the Ministry of RGB¹³, the NPO is responsible for developing the macro framework for national development planning leaving the responsibility for spatial planning to RGB. The foregoing highlights that there is no consensus within the government about the institutionalization of spatial planning.

The number of statutory changes shows that successive governments have considered the position and tasks of the NPO. However, these statutory changes are debatable. The Act regarding legal form and organization of the NPO (G.B. 1973 no. 90) explicitly stipulates in article 3 that amendments to the Statutes can only be made after having heard the Planning Council. Even when the government decides different, the decision has to be notified to Parliament accompanied with an advice from the Planning Council. Either way the advice of the Planning Council is required. Since this Planning Council is non-existent, the statute amendment contravenes the law. Based on the latest Statutes, the NPO comes under the Cabinet of the Vice President. The objective of the NPO is the identification, development, coordination and support of national plans for the development and promotion of the immaterial and material prosperity of Suriname.

In addition to the tasks referred to in Article 19 of the Planning Act, the statutes of the foundation also provides a listing of the tasks which looks like an extension of the duties listed in Article 19. Providing additional tasks to the foundation is also debatable as the law does not contain such an enabling provision.

In addition to national development planning, the NPO is also responsible for regional development plans. In this light, the regional plan for Brokopondo was finalized in 2013. They are in the phase of developing plans for the rest of the districts. It is noteworthy to mention that in collaboration with the Ministry of LVV and RGB, an AEZ (Agricultural Ecological Zoning) project will start in august 2014¹⁴.

The Ministry of OW is responsible for the development of Structure and Zoning plans in urban areas as well as parcelling in these areas. This leaves the non-urban areas unregulated. The District -and Ressor Council are respectively responsible for Resort and districts plans. These yearly developed district plans are an elaboration of the OP. The district plans are derived from resort plans which contain the requirements and needs of the population of the district. The district plans mostly cover the areas of special attention such as infrastructure (wet and dry civil technical works), health, education, utilities.

In addition to the 4 main ministries involved in integrated spatial planning, there are a few more ministries and agencies involved in land use and land management. The following table provides an overall view of the land related tasks of all ministries and agencies involved.

12Personal communication with Mr. J. Bouterse (Sub Director Spatial Planning and Environment) of the NPO

13Personal communication Mr. R. Kadirbaks (Sub Director Spatial PLanning) of the Ministry of RGB.

14 Prepared during period Oct-Nov. 2012 at the NPO and MoU on a revised approach signed with Embrapa in May 2013 at BUZA.

Table 3: Overall view land related tasks of ministries and agencies

Ministry/Agency	Related Task
Ministry of RGB	<ul style="list-style-type: none"> ▪ Proper spatial planning in consultation with a.o. the ministries of RO, OW, NH, and Finance (responsible for national development planning¹⁵); ▪ Topography, cartography, geodesy, soil survey and soil mapping; ▪ Land use (bodembestemming), where necessary within interdepartmental context; ▪ Proper land allocation, in cooperation with relevant ministries; ▪ The cadaster and land registers at the mortgage office; ▪ Control on the lawful and efficient use of issued land; ▪ Monitoring compliance with rules and regulations related to geodesy; ▪ The identification, exploration, exploitation and optimum management of the resource forest, flora and fauna; and ▪ Enforcement of legislation related to lumber production, Flora and Fauna.
Ministry of OW	<ul style="list-style-type: none"> ▪ Policy, planning and development of general structural, architectural, civil engineering and other infrastructural services for public interest; ▪ Water management and drainage control; ▪ Town planning and development (Stadsplanning en stadsontwikkeling) in collaboration with other ministries; ▪ Monitoring of the construction industry and enforcement of building regulations; ▪ Maintain healthy and balanced relationships between man and the surrounding nature and the realization and protection of a sustainable, optimal living environment; and ▪ The construction and maintenance of parks, gardens and landscaping, as well as maintaining government areas.
Ministry of RO	<ul style="list-style-type: none"> ▪ Regional Administration; and ▪ Integrated government actions, aimed at regional development and enhancement of the living environment of inhabitants of the districts and reconstruction of the interior.
Ministry of Fin	<ul style="list-style-type: none"> ▪ National development planning, as well as for the integration of sectoral and regional plans and programs in the national plan.
Ministry of LVV	<ul style="list-style-type: none"> ▪ Monitoring the correct use of agriculture land and waters. ▪ The prevention and control of animal and plant diseases and pests ▪ Aquaculture and agro-industry

¹⁵ Although the Ministry of LVV is not specifically mentioned, in practice it is one of the most important ministries

Ministry/Agency	Related Task
Ministry of NH	<ul style="list-style-type: none"> ▪ <i>National policy with regard to energy and natural resources, except for forest policy; and</i> ▪ <i>Inventory, exploration, exploitation of minerals and optimum management of the natural resource water, and the energy required natural resources.</i> ▪ <i>Drinking water supply</i> ▪ <i>Energy supply</i>
GLIS	<ul style="list-style-type: none"> ▪ <i>Administer of public records;</i> ▪ <i>Parcel administration , and the preparation, maintenance and update of the geometric file; and</i> ▪ <i>Maintenance of the National Geodetic Reference System.</i>
NIMOS	<ul style="list-style-type: none"> ▪ <i>Establish and implement national environmental legislation, preparing and implementing regulations for the protection of the environment and to coordinate and monitor the compliance with these requirements.</i>

2.3.2 Gaps and Challenges

The gaps and challenges elaborated in this paragraph are not related to technical capacity of the institutional framework, as this will be dealt with in chapter 4 on the SWOT. The following institutional gaps and challenges are only related to the current legal framework.

- Lack of a structured coordination between the relevant government institutions. There are several ministries involved in the land allocation process which makes the coordination complex and cumbersome and it takes more than a reasonable period before application on domain land is resolved;
- In the permitting process for exploitation of natural resources there is also a lack of coordination between permitting agencies (GMD, SBB, DC), resulting in overlapping concessions;
- In both the land allocation as well as the permitting process advice is being requested from other government agencies, which is not binding. As a consequence thereof, advice is not always considered. This is demotivating on advisory bodies and often leads to incorrect decisions by permitting agencies.
- Planning institutions are not established, hampering the implementation of the Planning legislation.
- There is confusion about and overlap of responsibilities related to spatial planning due to the fact that different ministries and organizations have departments responsible for spatial land use allocation.

In order to address the aforementioned gaps and challenges it is important that the Government develops a clear vision which direction they want to go with land use planning and how they would like to see land use planning implemented in the country.

2.4 Capabilities of Existing LUP Institutions

The status of land use planning in Suriname is known to be on a rather low profile. Several reasons have been mentioned already. A SWOT analysis that was recently conducted under this study confirmed known factors which contribute to the rather low profile and added new findings. These factors are: lack of specific legislation, outdated task settings, insufficient coordination, lack of political will, and prioritization of land allocation as opposed to land allocation and simultaneous, systematic, land use planning. In addition, severe lack of spatial data and information, lack of knowledge with regard to contemporary land use planning approaches, and substantive land use planning (practice), hierarchical decision-making as opposed to decentralized spatial decision-making based upon close cooperation between lower and higher decision-making echelons, a shift of emphasis from a project approach with (at times) a clear spatial reference to a sector approach with hardly any deliberate spatial reference. Given the above factors, it makes little sense to elaborate further on capabilities of existing LUP institutions. In chapter 2.6.2 a number of LUP initiatives will be elaborated upon with more or less detail. It is noteworthy mentioning that the ministry of Agriculture, Animal Husbandry and Fisheries (LVV) is the ministry which actually does something systematically in a pragmatic but not yet well-structured participative way with individual stakeholders, as well and for relatively large tracts of land concerning land use planning. Since 2005, RGB was inaugurated and took the lead according to their task setting. The following paragraphs will highlight implicit land use planning activities of a number of agencies. It concerns already institutionally embedded activities and very recent initiatives.

2.5 Public Participation Practices

So far, land use planning generally occurs piecemeal, too often on an ad hoc basis and still geared towards a basic-needs fulfilment approach and sector as well as spatially fragmented. Procedurally land use planning is not frequently coordinated on local level. This land use planning reality results, in a procedural sense, in a minimum standards participatory practice. A contemporary participatory approach involves designing legally embedded procedures for systematic awareness creation and deliberate goal-oriented stakeholder mobilization, including a firm knowledge / information transfer component aimed at shared, well considered, decision-making. As mentioned already, the ministry of LVV evidently does have a rather longstanding record with aggregates of individual stakeholder related participatory approaches related to agricultural land use planning. Often, this happened in close cooperation with the Soil Survey Department. Though just slightly surpassing a monothematic land use planning activity, it concerned relatively large tracts of land which structured space substantially.

It is also at this ministry, that a bottom-up approach, involving more stakeholders at a time, has been one of the main objectives for a couple of years. This is attempted e.g. through capacity building of (new) staff of district and resort offices to create awareness of investment possibilities. Within this context, intensification of structural relations with RGB for swift land allocation purposes is a strategy. Through the national government objective to drastically increase agricultural production, LVV is expected to play a far more pronounced role in SLUP. Also, their participation in the Agricultural Ecologic Zoning (AEZ)-program in cooperation with RGB and the NPO, may well contribute to an enhanced participatory approach. So far, as it appears, a participatory approach is given shape mostly through increased involvement in public knowledge transfer to farmers and (starting) agricultural entrepreneurs.

Increasingly, the Ministry of Public Works (OW) creates awareness and involves citizens concerning basic activities to solve urban sewerage management problems, urban waste disposal and (innovative) adaptive behavior to solutions to traffic problems. Finally, approval of urban land subdivisions for residential development, a hot issue since decades at this ministry, remains a major issue as well as a concern within the framework of urban land use planning.

Also the ministry of RO directly involves inhabitants of rural villages in planning of Community Forests and village upgrading. The Ministry plays a supporting role, primarily with concern to allocating Community Forests by SBB (Foundation for forest management and control) .

With concern to lower level interactive decision-making between district level and RGB as well as potential increased participation in land use planning decision-making, the following can be brought forward.

The survey has revealed that (eventual selective) awareness creation and mobilization of stakeholders is of utmost importance to give Sound Land Use Planning a fair chance to be launched successfully and take off swiftly. From answers to questionnaires, personal meetings and presentations it became obvious that basics of land use planning and procedural steps still need ample clarification; even with regard to own stakes to a certain extent. Much of their presently rather restricted land use planning competence is revealed in the answers of questionnaires on the one hand. This is a concern. On the other hand, all staff of ministries and districts involved did fully agree that land use planning is crucial for Suriname's development. A majority of participants, both from ministries and districts, were absolutely delighted with this project of RGB and WWF. District Authorities however portray a rather dualistic ability towards development. On the one hand, district staff gave evidence of multi-sector as well as spatially detailed (local) knowledge of and proved to be very concerned with environmental issues of their district; on the other hand they still have very little decision-making power. As compared to Ministry staff, their knowledge is far more spatial-based and their concern generally as well. Altogether, though intensive capacity building will have to be started up as soon as possible, there is clear evidence that sound land use planning is welcomed by all respondents.

2.6 Status of LUP in Suriname

2.6.1 Context analysis

Ideally, land use planning is directly related to national development policy objectives. The actual National Development Plan Suriname, 2012-2016¹⁶ distinguishes between six main policy objectives, of which economy, welfare, governance and spatial planning and environment have a direct impact upon land use planning. This also includes land (use) consumptive aspects. The above mentioned main policy areas emphasize among others production increase, with a strong emphasis on agriculture. This may substantially modify the existing social-spatial structure of Suriname. Housing and related supply of basic facilities (a.o. water), rationalization of governance and its de-concentration and decentralisation, obviously both in terms of less-centralised decision-making authority and spatial distribution of decision-making on local level, may result in better and timely land use planning and a far more rationalized location pattern of distributive services and facilities . This objective is, as stated, geared towards more autonomous decision-making and

¹⁶ Ontwikkelingsplan Suriname, 2012-2016; Suriname in Transformatie, 2012

partnership on regional and local level through participatory approaches.¹⁷ The agricultural sector should strive at production increase in the Coastal Plain as well as the Interior through development of sustainable production systems¹⁸. Emphasis has also been laid on spatial conditions to be fulfilled for the realization of sustainable development. A sound organization of space, spatial planning and compilation of inherent structure and land use allocation plans, taking site and situation (absolute and relative location) aspects into consideration, are emphasized with ample attention for sustainable environmental management, conservation of wild life, forest, land, water and waste management.¹⁹ Above all, formulation of new spatial planning legislation based upon contemporary standards is declared a priority issue. Within this context, GLIS-information is supposed to lay a foundation for the spatial organization of and planning for the entire territory (by actors who are formally entitled to plan). Most basic to land use planning is that the spatial distribution of available land to plan uses on, must be made known timely by MI-GLIS. This is still not the case.

Probably this is the main reason why land use planning in Suriname occurs spatially highly fragmented, is not systematically organized and applied and thus not embedded institutionally. Moreover, it seems that land use planning has been discouraged during decades. The above is further reinforced by legislative omissions and use of outdated (land use and spatial planning) concepts in legislation. Formulations thereof did not keep pace with developments in and paradigmatic shifts (for instance, a shift of focus from soils to landscapes since about 10 years) that shape conceptual approaches in geo- or spatial sciences. This robust group of disciplines constitutes the backbone of land use planning (spatial planning) and its practice. Subsequently, the abovementioned factors organizationally result in a fragmented, partly overlapping, basically small scale and above all ad-hoc, re-active, -interventionist, usually facet-oriented or basically mono-thematic approach that lacks coordination. This, in its turn, is a direct effect of the predominant sector approach which lack enough inter-sector integration and a neglect of the impact on space, particularly natural landscape elements. A pro-active approach while looking ahead which is substantiated with an analytical retrospective view generally is lacking appropriate location requirements. are hardly deliberately considered. At best, some elementary forms of sector-spatial integration are apparent. The resulting lack of coordination which in itself is unfortunately reinforced by (a.o.) legally embedded overlapping tasks of ministries, planning-related competence quarrels and personal disputes (refer to SWOT-analysis resulting from questionnaires), finally is not favourable to creating a proper foundation for a strong institutional structure within which sound land use planning can flourish.

As far as land use planning in a proper sense is actually at stake, which is the case, initiatives are usually, single sector- and facet-based, like e.g. turn-key housing supply as such which is basically perceived and approached from a construction and economic value point of view rather than a social value, process-based housing development one.

Often enough, particularly through ongoing land allocation practice at RGB in close cooperation with LVV, RO, NH, OW and District Authorities, the impression is given of an interventionist planning approach. In fact, inconsistencies in what should have been the foreseen or preferred spatial precipitation of a comprehensive approach to these land use allocations unveil a sometimes rather opportunistic and / or

¹⁷ Refer to footnote 9, pg. 47-49.

¹⁸ Refer to footnote 9, pg. 68-70

¹⁹ Refer to footnote 9, pg. 140-150

acute, re-active, problem solving approach on the level of individual locations. Basically, these land allocations are evaluated at neighbourhood level or at best at a higher, intra-district level. Incidentally, decision-makers look across their own boundaries and take (potential) developments there into consideration. Hence, their limited to absent cross-border (sector-based) horizon does not urge or even invite to inter-district cooperation and restricts potential cooperation and to inter-district participatory decision-making²⁰. This "planning style" limits a participatory approach to SLUP. For SLUP, besides a district typology, a regional typology²¹ of Suriname is therefore essential. This will serve as a regional (integrated spatial) development base and guide on intermediate scale level. The actual regional subdivision of Suriname which is designed and used by the National Planning Office, is of an administrative nature. Both district and regional typologies require updating at least every 5 years because development possibilities and limitations change while borders of typified regions continuously shift .

Fortunately, districts increasingly take initiatives (like e.g. obviously in Para and particularly Wanica), supported by an umbrella function of the DLGP-program. However, DLGP lacks a holistic, macro-level, (integrated) spatial approach which is a basic condition to be fulfilled for sound land use planning. In conclusion, spatial decentralization at district level, as a prominent component of land use planning and inherently spatial development, has not been touched upon as yet in the DLGP-program. As a result, areas where planned objectives are realized are rather small. A holistic view of the differential potential of land to facilitate particular uses on specific locations is unfortunately absent, basically because of a severe lack of relevant and up-to-date *social-spatial* information.

Besides the aforementioned bottlenecks to SLUP, land allocation practice constitutes a huge burden on implementation (planning practice). It has been determined that there are actually about 300 lawsuits running against the State. This bottleneck to development is recognized. The Government through installing a Presidential Commission and a Parliamentary Commission in close cooperation with the ministry of RGB gave highest priority to solve land disputes and provision of title deeds. At present, their efforts are locally organized also and supported at district level by newly established RGB Offices. This resulted in granting thousands of title deeds²². Frequently, plots were occupied formally already for decades under circumstances of legal uncertainty and inherent low or unstable productivity. Moreover, the land couldn't be sued as collateral for loans for investments to increase productivity. This new situation could result in a more transparent land distribution situation, which obviously improves the probability of more successful land use and SLUP-practice.

Land use planning on (widely) scattered locations becomes relevant in the absence of a macro level approach for aggregations of parcels. Once large areas are focused upon, these may have a considerable and observable impact on other "large scale" uses (the macro functional differentiation) as well as on small uses. Hence, within a viable sphere of influence certain land uses may trigger competitive claims of and for other land use allocations which may lead to agglomeration effects and external economies. This implies

20Lutchman, H.T.J., Land Subdivision and Housing schemes in Greater -Paramaribo, Paper presented at the International Land Management Conference, Inst. of Housing and Urban Development Studies, Rotterdam, 1987.

21Gisplan-Geosys, Veenstra, J.; Regional Information System for the National Planning Office, EDF-project, 1993.

22 Interview Minister Relyveld of RGB, Sunday Dec. 28th, stating that about 15.000 title deeds ("*beschikkingen*") will be issued up to May 2015; actually 12.000 are delivered already, Talk Program Channel 26.

that certain land uses attract others, causing aggregates of land uses that mutually support each other's objectives and functioning which results in maximization of their output. This is a basic objective of land use planning. Only occasionally the impact of small locations (e.g. mining, certain urban uses and some agricultural uses) have a significant *spatial, regional* impact. Given the actual land distribution disorder which gradually took shape, by definition, establishing a support structure for Sound Land Use Planning in Suriname will yield (quickest) results if a well-structured, systematic bottom-up approach is followed, and if executed through intensive cooperation between District Authorities and key-land use planning Ministries, led by RGB. However, this *procedural* approach can only be successful if at least the contours of a macro level spatial development framework is agreed upon beforehand.²³ Development of a vision thereof, involving all stakeholder groups, is therefore of prime importance.

Land use planning for rural areas has been identified as the main gap in the existing legal and institutional framework for land use planning in Suriname. The Ministries of RGB, LVV and RO are basically involved in planning activities in rural areas. The ministry of NH may increasingly play a key role in rural land use planning through their rural electrification and particularly rural water supply functions; these functions are considered most valuable assets for rural settlement and development. Finally, this brings us to the conclusion that Suriname is in need of a Rural Planning Act. Such an Act will significantly facilitate rural (land use) planning systematically, enable the use of its rural space in an ordered and cost-effective manner, to counteract uncontrolled urban development which costs Surinamese society awful amounts of funds and thus prevent and eventually correct disordered urban growth through sound rural-regional planning approaches, regulations and practice.

But so far, an important institutional factor which structurally undermines mechanisms to systematically facilitate land use planning, got little to no attention. On the one hand, urban planning is separately implanted at the ministry of Public Works, a typical infrastructure ministry where it is supposed to function under the Urban Planning Act (UPA) within an all overruling civil-technical, wet and dry infrastructure implementation, management, maintenance and building (control) government ministry culture. This civil-technical infrastructure culture offers very limited seed and cross-fertilization functionality for urban planning to flourish. Moreover, the functionally attached "Building Control" section also emits very limited affinity with land use or spatial planning. On the other hand, rural planning was not specifically focused upon at the time of promulgation of the UPA. For a predominantly rural country with a respectable agricultural tradition, this was a regrettable omission by that time and still is. A Rural Planning Act consequently still does not exist, even though there was a section geared towards rural planning (*Bureau Landelijke Opbouw*) at the NPO during some time. Subsequently, the actual organizational and institutional setting for land use planning (spatial planning) is not to be preferred. There is ample evidence that the actual urban-rural land use (and spatial) dichotomy that stems from spatial reality is unnecessarily aggravated institutionally as well in this way. Both the aforementioned omission and the reinforced dichotomy in the case in question could be relatively easy transformed from a situation of professional competition and clashes of interest into a harmonious situation if one sole ministry is made responsible for both urban and rural (land use) planning. It is our conviction that such will create a solid foundation for SLUP in Suriname. It should be brought forward that already during inception discussions of the new RGB ministry, this issue has been righteously raised²⁴. But even more plausible arguments could be brought forward to underpin

²³ Expert judgement H. Lutchman

²⁴Discussions with Mr. S. Kadirbaks, Head sub-Directorate Spatial Planning RGB, December 2014.

this conviction. These relate to the issue of gross and net land subdivisions of which particularly those parts for residential purposes have been a source of a slumbering conflict between the ministries of RGB and OW. Gross land subdivisions, including land use allocations for relatively large plots within envisaged land use schemes, are designed on base maps by RGB after feasible land has been identified. In order to finally implement these land use schemes however, the ministry of OW demands final decision-making as to refinement of land use functions due to its mandate concerning wet and dry infrastructure design and implementation. As a result, OW could finally make (significant) alterations, particularly related to so called "residential" uses to the original land use scheme, which caused frictions between RGB and OW. Within the framework of the aforementioned land use scheme planning, this imposed procedure hampered the effectiveness of land use planning at RGB. It is a valid conclusion that the Urban Planning Act did not function as meant during about 40 years²⁵.

A further functional articulation reveals that the UPA has never been made operational to the full, but de facto functioned with concern to a facet which has been exhaustively used. Due to the existence of this UPA, the Planning Section (*Planologische Dienst*) at OW had the required elbow room to approve a wide range of proposed land subdivisions which gave shape to a majority of the post-'60 extensions of the Greater Paramaribo region. These land subdivisions for housing as such and their site characteristics are the cause of a variety of actually prominent urban management problems. Clearly, there is ample evidence that the Urban Planning Act has been intensively applied and gave ample room to realize a however narrow range of specific urban development objectives. To date, these achievements still have a considerable impact upon transforming an originally, potentially healthy urban spatial structure into a dysfunctional reshape with a cumbersome development perspective. One with a negative and almost daily recurring impact on a substantial part of Suriname's (urban) population. This very partial application of the Urban Planning Act is not only to be blamed for ruthlessly dismantling entire valuable and unique cultural landscapes (for instance remnants of old coffee and cacao plantations in the North)²⁶ and destructing entire wet land, marsh land and (components of) shell and sand ridge eco systems. The aggregate of this all lead to a disordered pattern of urban land uses and distributions of services, which in its turn will now inevitably urge for applying numerous costly urban redevelopment interventions on different scales. Moreover, this rather haphazard urban land use distribution is basically attributable to for instance traffic congestions, numerous dead-end roads resulting from spatially unplanned, non-fitting road infrastructure, misshaped retail trade catchment areas, skewed spatial distributions of public services, very limited recreation space and too limited pedestrian areas causing unsafe situations as well as rarely foreseen space reserves to anticipate future space requirements.

RGB has strong functionality to steer and control sound land use planning (conceptual, procedural and in practice). The de facto functionality is multi-dimensional in this particular context: their land allocation and land management task on a country-wide scale, the several land-related departments of RGB through which close relations are internally and externally developed with LVV and NH, their clear spatial orientation which is similar to that of District Authorities. In short: a ministry with an evident spatial respectively land use (planning) "ministry culture". Their land use planning task needs to be substantively reinforced to strengthen RGB institutionally, which could be effectuated through combined urban and rural planning

²⁵Integrated Coastal Zone Management Plan Suriname; Final Assessment Report, Implementation of a Pilot Plan for the Paramaribo-Wanica Region, 2009.

²⁶Lutchman, H.T.J. Article de Ware Tijd, 31st Dec. 2010.

tasks within an autonomously synergetic and professional spatial organization and planning context, whereas external erosive influences need to be eliminated. Because two different agencies (basically ministries RGB and OW) are supposed to perform different, rather contrasting (urban and rural) LUP functions, it is necessary to develop a coordination structure to synchronize land use planning activities.

2.6.2 Land Use Planning-related initiatives

In this paragraph, recent land use planning initiatives of ministries, district authorities and particularly at relevant institutes will be dealt with. Mainly their basic and most common, sometimes ongoing, land use planning activities will be mentioned. Reference is made also to results of questionnaires, interviews and associated activities like "activity quick scans" of district offers and terrestrial reconnaissance surveys in (basically selective) sample areas of a few districts.

District Authorities: District Plans recur on a yearly basis and factually provide a listing of requirements and needs which are identified by District Councils in close cooperation with Resort Councils. The so called District Plans exhibit a substantial infrastructure management content. These councils are responsible for the compilation of their "resort plan". In fact, this process of "plan formulation" exhibits the most sustainable participatory approach, except for plans with reference to the designation to Community Forest areas where a deliberate participatory approach is practiced.²⁷ Both district and resort plans are basically sector based, however with a clear, though small scale, spatial component. During interviews it was obvious that District Authorities often expressed their rather detailed knowledge of the social- and natural spatial structure of the territory they administer. It is at this decision-making echelon regarding their politico-administrative unit, that at times relatively clear contours of a development vision including a spatial component has been (orally) portrayed. It appeared at district level too, that at least elementary building blocks for sound land use planning were obviously provided. Even more, though District Plans contain a relatively huge "wish list" section with an evident public works maintenance component, some elements are evidently vision-oriented and if not, clearly (though small scale and ad-hoc) LUP-based.

However, systematic bottom-up LUP-practice at District level is hampered by a number of reasons, namely lack of (land use planning) skills, decision-making authority resulting from the existing hierarchical decision-making structure, lack of appropriate legislation, a structural shortage of equipment and tools, lack of a continuous stream of trickling down land use planning concepts or, even better, structured, systematic approaches to LUP from a faculty of Geo- or Spatial Sciences and / or ministries within a wider spatial development context and finally, lack of enough office space to make land use planning practice operational²⁸. Some districts possess a satisfactorily to well ordered, detailed amount of (spatial) information, whereas others seem to have a huge information shortage. Surprisingly, a number of Coastal Plain Districts experience a relative shortage of data, including maps to support an integrated spatial planning approach. This data shortage can be resolved with relative ease. The most eye-catching data shortage however relates to actual, up-to-date thematic maps and general data shortages at District Offices of the Interior.

²⁷ Information ministry RO, Forests are concerned--also refer to Questionnaire RO.

DBK: The Soils Survey Department of RGB experiences, after a long period as a dynamic department focused upon soil surveys, inventories, mapping and analyses agency, a period of inactivity. The soil information that has been generated for decades is however still valid to a large extent due to the rather slow decay rate of that type of information. For decades, the output of DBK has been very large and data / information in soil survey reports and numerous related subjects including accompanying maps at a wide variety of scales is fortunately maintained and stored quite well. Besides numerous reports and accompanying maps at different scales of several areas, DBK has a well maintained and ordered collection of panchromatic and black and white infra-red aerial photographs at its disposal. Though photo-flights were made decades ago, these multi-purpose data sources are still invaluable to sound land use planning for rural areas and for land management purposes.

The **Centre for Agricultural Research in Suriname (CELOS)**, is focused on sustainable management and utilization of renewable natural resources through applied scientific research and services. CELOS has gained importance with its laboratory research (soil chemical and physical) for essentially agricultural purposes. CELOS is also involved with certain mapping and reduced land evaluation activities.

The Department of Natural Resources and Environment Assessment within CELOS (NARENA) is well equipped with hard- and appropriate software for, in principle, all relevant types of spatial data acquisition and information generation through amongst others image processing and subsequent geo-database storage and retrieval, analyses and visualization. However, there is no specialized land use planning staff available and emphasis seems to remain on (relatively small project based) mapping on request. Soil information (overview map) from DBK (Soil Survey Department) has been digitized (partly) in the past; apparently the final goal seems to have been achieved with this activity.

The **Foundation for Forest Management and Forest Control (SBB)** is responsible for sustainable forest management. This is promoted through the Forest Management Act of 1992 and related regulations. Sustainable forest management in its turn, both facilitates and enhances sound land use planning. SBB formulates policies regarding sustainable tropical forest management and forest exploitation options for the Ministry of RGB.. Through its forest management, SBB is already for years successfully applying research methods and techniques, including contemporary approaches using satellite images and GIS, in support of forest management and efficient data delivery. A rather advanced survey method has been developed to make inventories and monitor forestry activities even up to tree-level in their Geo-database, of which information is provided to stakeholders. The information consists a.o. of overviews of concessions, i.e. their geometric properties and relevant attributes (concessioner, registration number, date of issue, etc.) which inherently guide potential investors to locations which are still available. This relevant geo-information is also valuable for land use planning purposes; however, more intensive interaction is to be preferred between SBB and the sub-directorate of Spatial Planning of RGB. SBB structurally invests in making ample efforts to interact with stakeholders to facilitate rational utilization of Suriname's forests. Among these stakeholders with whom information is exchanged, there are also other national and international organizations involved with forest management. Altogether, this should be considered a good example of a relevant approach to more structured sector-space integrated, sound land use planning for relatively large areas. Like with main infrastructure components, SBB's deliberate forest management can impose structure on space and direct development to a certain extent. Because of the (accumulated) size aspect of e.g. forestry licenses, the role of SBB is also with respect to this issue important. This role as a stakeholder naturally should be perceived as such by SBB itself as well.

The **Nature Conservation Department of RGB** contributes significantly to passive land use planning and implicitly SLUP. Their invaluable efforts which amounted to the demarcation of a respectable number of protected areas, provide ample evidence.

The **Anton de Kom University of Suriname (ADEKUS)**, Faculty of Technology Sciences (FTW-BSc-level)²⁹ contains a section dealing with themes with relevance to SLUP, a.o. Land Evaluation, Spatial Organization (*Ruimtelijke Ordening*) and Land Use (*Landgebruik*). These subjects actually have a compulsory status for all students. They are thus supposed to be systematically equipped with knowledge and research methods about these issues in support of Sound Land Use Planning. Remote Sensing and soil sample analysis (laboratory research) are dealt with actually by Celos-Narena.

The **Management Institute Land Registration and Land information system (MI- GLIS)** is intended to promote legal certainty in respect of real estate in legal matters and in administrative matters between citizens, private administrations (notaries) and public administrations. Provided that this primary objective is successfully achieved, a derived objective may lead to a proper overview of economic transactions pertaining to real estate. This institute apparently has, based on evidence given during the past 10 years, quite a long way to go before the intended geometrically correct, spatially-referenced poly-thematic (multi-sector) information which is aimed at by MI-GLIS, can be delivered to ministries and agencies.³⁰ The primary, most essential, cadastral task seems to have a long way ahead as well before all objects (parcels, buildings, concession areas etc.) will be accurately registered and can be kept up-to-date. Ample time is required before all of the about 18 attributes, including inherently registered ones like surface, perimeter, x, y-coordinates are part and parcel of a well-functioning system. However, this GLIS- objective is beyond the scope of this SLUP-project. It is fortunate that for this SLUP-project valuable information was available for at least some relevant sample areas and some relevant attributes to land use planning. However, it appears that, for larger areas (e.g. coastal districts, in our case) a significant land use planning bottleneck may arise as could be deduced from price quotations made by MI-GLIS for two districts. Judging from these quotations, particularly as compared to usual prices for mapped data, an affordability issue may be at stake on project level and within the context of land use planning in Suriname. Because of the nature of the cadastre which has been set up, there may be geometric accuracy problems. Still, whether geometrically fully accurate or not, this information is useful since land use planning on higher scale levels does not require 100% accuracy. Moreover, sound land use planning options can be deduced through smart extrapolation, by using this information, though the applicability will be generally restricted to only certain facets of sound land use planning. These facets usually have varying degrees of relevance in and for different districts and other regions. Recently, a joint initiative aimed at data sharing of MI-GLIS and a private firm (Gissat)³¹ has been launched. There is a website on which more details are available. This initiative raises a number of discussion points. For instance whether data of ministries and institutions which are provided and subsequently fitted into a geo-informatics coat, will have to be paid for if requested in a later stage. Further, it is questionable whether ministries etc. would not prefer their own geo-processing (too), in their own geo-processing environment, while understanding their thematic subject matter best and exchanging information with other relevant institutions. On a global level, the use of remote sensing

²⁹Personal communication with the Head of FTW, ADEK-university, Dr. R. Nurmohamed.

³⁰Expert judgment H.T.J. Lutchman, 2014.

³¹ <http://www.gissat.com/gissat/contact.php>

methods for data acquisition and data processing with GIS gradually diffuses from major urban centres downwards to small towns, with increasingly accelerated speed resulting from dedicated capacity building and institutional strengthening projects. In less developed countries, such projects are often initiated within a context of governance and development programs through development cooperation.

Other agencies like a. o. **NIMOS** and the **NPO** are already mentioned in other chapters, including their eventual land use planning related services. Particularly at the NPO, a huge amount of information related to development planning is available in the library. Also, sets of useful black and white (panchromatic) and black and white infra-red aerial photographs are available. Unfortunately, these valuable aerial photographs are not registered / administered well and maintenance could be much better. Moreover, it is worthwhile mentioning that a photo flight has been recently made (end of 2013) of a block of approximately 1200 km² from the coastline up to the J.A.P. International Airport. The area has a dimension of +- 30 x 40 km. The flight plan also included simultaneous collection of detailed height data using LIDAR.

A number of new space oriented initiatives are actually in a research phase, but may yield promising results to co-facilitate sound land use planning. These comprise the following:

The **Investment Development Corporation Suriname (IDCS)** started recently with a project to assess the suitability of soils in the young coastal plain. Soil maps of the Soil Survey Department of the ministry of RGB function as primary data source and topographic base maps. It is assumed that through systematic soil sampling (possibly stratified sampling) locations will be determined as control and up-dating units to compose a reliable soil database including relevant soil physical and chemical attributes pertaining to existing (mapped) geometric (soil) units in order to facilitate meaningful soil suitability analyses in support of agricultural land use planning purposes. This process, de facto involves an accomplishment of the agricultural land use allocation process. It will also overall support sound land use planning approaches in a more systematic way and on a much larger scale at the level of plot aggregates. The final intention is to finally compile an Agricultural Master Plan. It is worthwhile mentioning that master plans fit technical (building, road construction) types of activities much better. The rural social-economic reality of farm activities is rather dynamic and becomes increasingly differentiated due to swiftly changing high-tech input possibilities and ICT. Hence, *spatial flexibility* is of prime importance. Master Plans intrinsically do not match the high rate of flexibility to market developments, especially of external markets, which become increasingly dynamic. But this initiative in itself may firmly support the national agricultural development objective of the actual government in case cooperation between actors is intensified gradually. Direct involvement of both the ministries of RGB and LVV will be required to facilitate further decision-making within a land- and spatial evaluation framework, which will substantially enhance sound land use planning practice. Such a procedural approach will also reinforce the existing institutional structure for proper decision-making within the context of the national agricultural production objective of the Government. It should be remarked that a soil suitability analysis and graphic outcome in map-format is the basic foundation to facilitate increased agricultural production. Much will depend of a number of factors to materialize this effort, like e.g. the actual spatial distribution of land rights, plot size and most important, existing legislation to enforce agricultural (crop, etc.) production. Given results of the soil suitability analysis and map-output, agricultural production as such depends largely upon the market situation, owners' market orientation, available skills, human resource capacity and capabilities, absolute and relative location properties, mechanized input, mobility and capital. But sound knowledge of what will grow best on which

locations (soil units), may be a significant facilitator and possibly a booster to increased agricultural production.

The **Brazilian Soil Survey Agency EMBRAPA** recently started training of staff of the National Planning Office and particularly the Ministry of LVV with support of the ministry of RGB, in soil analysis methods and techniques to determine soil physical and chemical properties. Their focus is on soils that are located more land inward (Victoria area). With concern to this, the Minister of LVV explained the recent focus on land inward areas as follows: "Within the Agricultural Ecological Zoning (AEZ)-context, the ministry of LVV" (as the main land consumer or land user), focuses actually on southern sections of the Coastal Plain. This decision is induced by a combination of agricultural productivity increase objectives and increased mechanized input possibilities, as compared to common soil physical and soil fertility properties in the Young Coastal Plain, which allow a reduced frequency of mechanized input possibilities³².

This AEZ-initiative has quite a long way to go. The land suitability mapping project of IDCS is a direct approach to finally implement a AEZ-approach to sound land use planning (using zoning as a base to further planning). Continued and cooperative efforts between RGB, particularly LVV and the NPO will be required to yield quicker land use planning results based upon a comprehensive AEZ-approach. The NPO also produce a number of thematic maps of districts which are quite useful for SLUP purposes. Finally, the library of the NPO contains a wide diversity of useful information. Maps which have been previously produced by the Bureau for Rural Development (*BLO*) must be available as well.

The **Agricultural Information System Suriname (SAIS)** which is being set-up at the Ministry of LVV since 2006, is a valuable initiative which can support SLUP. It employs a rather outdated method however to an inventory of agricultural activities³³. The system is based upon Agricultural Census Areas that serve as basic aggregation units to gather agricultural data on plot level and analyse these (descriptive) statistically with concern to quantitative and social-economic output, resulting in tables, graphs, representative figures and explanatory descriptions. As it appears now, data analysis goes on, meanwhile updates are necessary again. A bottleneck to both synthesis and analysis is that the ministries' Agricultural Census Area boundaries do not coincide with the boundaries of Census Districts of the General Statistics Bureau Suriname (ABS). In the fifties, a number of dedicated aerial photo flights were made by the Central Bureau for Aerial Surveys and Mapping (CBL) on request of the ministry of LVV for purposes of agricultural inventories (panchromatic, black and white). It is not known whether these data sources which may still serve various other survey purposes to date, are still available. The ministry of LVV possesses numerous useful articles and agricultural research reports, which were often published in close cooperation with the Soil Survey Department or by just using soil data for typical agricultural research purposes³⁴.

ABS collects very valuable attribute data of a wide range of amongst other demographic, social and socio-economic themes on a yearly basis for different politico-administrative entities and the country as a

³²Interview Mr. S. Algoe, Minister of LVV, TV-program Info Act, Thursday 22 August.

³³ Expert judgement H.T.J. Lutchman

³⁴ Generally refer to Landbouwkundig Tijdschrift, Celos bulletins: previously regularly produced magazines of LVV with scientific agricultural and related information (like crop production methods, agro-economic farm productivity analyses, vegetation type descriptions, plant / crop diseases / impact of weed killers, pesticides, fertilizer).

whole. Recently, a number of these data have been presented in spatial (thematic map) format, which increases their usefulness and provides a new dimension for understanding the scope of the information presented. Though the Statistics Bureau is not involved with land use planning as such, for most land use planning initiatives, this type of information is indispensable. ABS applies basic descriptive statistical methods. This is highly important anyway. For Development Planning including Land Use Planning, more advanced statistical methods are required. These involve incorporation of raw, non-aggregated, data. It is not known whether and under what conditions ABS would be willing to supply raw data to ministries for further dedicated, advanced statistical analysis (like Factor Analysis, Multiple Regression Analysis, Linear Programming etc.).

2.7 Data sources, data and information for SLUP

2.7.1 Data sources, data and their properties

When data sources for SLUP are considered, a distinction is required between primary data sources (e.g. aerial photographs, a huge range of satellite images, ground photographs, interviews, field observations) and secondary data sources (generally: the whole range of survey reports, technical reports, maps etc.). From these data sources, data and subsequent information can be extracted, using contemporary methods and techniques, in particular satellite image processing software and a Geographic Information System. Using the well-known statistical program SPSS which has a visualization component, may yield both essential basic and advanced agricultural and agro-economic statistics and basic but significant maps in support of further decision-making and policy formulation. Both methods and techniques are for decades already commonly practiced and have proven to be inevitable in support of methodological, substantive (conceptual) and practical aspects of sound land use planning.

On the one hand, there is an evident lack of *recent* spatial data, particularly thematic data with a geometrically correct and reliable spatial reference. On the other hand there are numerous relatively correct old maps of a wide thematic variety, which are quite useful with some adaptations within a Remote Sensing and GIS environment. These maps can quite well serve as base maps to link attribute data to, with a resulting acceptable reliability for land use planning purposes. Besides, medium to high resolution satellite images with their inherent multi-purpose data source function, their supplementary function as a base map and planning tool, can bridge still existing reliability gaps quite well too. This is a proven method particularly for data acquisition purposes in *direct* support of land use planning in relatively rapidly changing environments which are usually (sparsely) inhabited.

When the focus is on natural environments (of the Coastal Plain), there are fortunately sufficient data sources due to the slow decay rate of that type of information. From questionnaire³⁵ results it became clear that the distinction between data and information is not always made in a proper way. This issue closely relates to capabilities to make concepts operational, select the correct (set of) variables and know to what extent variables are measurable and on what scale measurement level (e.g. ratio or just ordinal scale) or

³⁵ The survey method consisted of written questionnaires to ministries / district offices; whenever possible extended with reconnaissance surveys and broader activity quick scans through more in-depth discussions at some district offices.

when data are to be considered intangible. Next, which dummy variables could still provide information about the issue at stake. These basic aspects of land use planning surveys, research and related analyses have become rather obvious during interviews as potentially important capacity building activities.

However, through smart and innovative combination of the relatively scarce (recent) spatial data with data from other sources using GIS-methods and techniques, at least something useful can be done, *if* the required data are *accessible* timely as well. Initially, methods should be adopted to "combine various data sources, literally filling in the blanks by means of iterative proportional fitting. It is worthwhile considering that "the generation of synthetic data, making the most of all data that is available, bridges the gap between the analytical opportunities"³⁶.

Respondents often mentioned bureaucracy as a significant bottleneck to quickly get hold of the required data that are theoretically available at certain government agencies. In practice, their timely availability imposes a formal barrier to land use planning indeed.

Actually, given the relatively large data demand, data availability is rather low when it concerns directly available data with the right spatial, thematic, temporal resolution and geometrically correct spatial match (reference). When it concerns mere availability of data, hence data that are useful in one way or another, there are plenty of basic documents available like generalized resort and district maps and some thematic maps as well. However, far too many government officers involved with certain aspects of land use planning, are not aware of the usefulness and mere existence of certain maps, like e.g. hydrological and soil maps on different scales. These support different decision-making levels (national, wide region), etc. This is a reflection of the capability to understand the value of data types and their usefulness. In relation to this, understanding the impact of the decay rate of different types of information needs (far) better understanding for appropriate use or eventual rejection as being outdated. It needs to be understood that data are in fact never outdated. With age, their differential use becomes more limited indeed. Data are however never useless; specifically for process approaches to assess spatial-temporal transitions, so-called out-dated information is always quite valuable in land use planning so as to understand transformation processes which provide essential insights into possible future land use development courses. Most important is that understanding data properties and primitives (the most basic data contents) is the more important so as to avoid invalid (logical) inferences.

The thematic resolution of data, which can be understood as the level of detail of a classification which underlies the data, is often crucial for types of (spatial) analyses that can eventually be performed. With respect to this issue, reference is often also made to the level of detail of data being collected. The more detailed, the more time is consumed, more human resources required and a sound "translation" into basic building blocks (properties and primitives) of the theme(s) involved and thus the more costly surveys are. Since survey costs, available time and professional standards are closely related to the aforementioned concept (thematic resolution), the huge impact of these factors that implicitly determine data quality, are contextually unveiled as crucial bottlenecks to sound land use planning. Observations were made in the past that there is often not enough space to store original data (on sheets etc.). It seems to have happened

³⁶ Hooimeijer, P., Knaap, G.A. van der, & Weesep, J. van (1994). Perspectives on population geography, demographics and forecasting. *Nederlandse geografische studies*, p. 9-17.

too often that these original data were thrown away to create more office space. This should be avoided at all times.

It may be obvious too that the thematic resolution has a high degree of association with the spatial resolution. Indeed, the higher the thematic resolution, the smaller the spatial units that are referred to. Hence, the greater the spatial resolution and thus, the more possibilities for differential data aggregation (particularly within an automated environment). A possible negative effect of detailed data, depending on hardware properties, is that at times data handling may evolve rather slow. Particularly spatial data are bulky and demand huge (geo-)databases that consume quite some disk space; rapid and high-capacity processors may decrease cost effectiveness of projects. However, "slow" is still extremely rapid as compared to all impossibilities and frustrations of manual data handling. Ultimately, the more detailed data are, the bigger the benefits on the short and long term. It is known that after the first time of collecting detailed spatial data, costs, time and human resource input are drastically reduced during subsequent data collection rounds in the same area. Then it amounts to (selective) updating, which is far less time consuming, is far less costly and can be executed by just a few staff as compared to the first data collection round.

With concern to spatial data, by far the highest investment (time and costs) is made during the first data collection round. To increase cost-effectiveness, it makes sense to consider "*well equipped*" consultants for the first data collection round *including capacity building*, after which regular staff of government agencies can take over. A significant issue to be addressed is whether data and information has a correct spatial reference and to what extent. This issue relates to correct geometry and surfaces. Depending upon the theme involved and particularly the visualization method (e.g. symbols instead of real shapes) used, this reference can sometimes be rather vague. Geo-technology allows for proper spatial referencing, display, analysis, synthesis and scenario building options for sound land use planning. However, for macro level spatial planning as such, geometric accuracy is not prominent at stake, but (even approximate) matching of data in a geo-database may be time consuming and cumbersome. A Geo-technological approach is inevitable to sound land use planning.

2.7.2 Data delivery mechanisms

Data delivery imposes different problems for government agencies. Data inter-dependency relations are cross cutting in nature, but there are strong differences in dependency from one agency to another. Data delivery is often slow due to bureaucratic procedures. Moreover, there are internally, within government agencies, typical hierarchical relations. Efficiency is thus a critical factor and waiting time becomes long. It is obvious that this has led to frustrations and a reduced speed of operations. Moreover, inter-personal relations sometimes do have a destructive impact upon efficiency and effectiveness. A factor which is not to be underestimated refers to the use possibilities of data. This relates, on its turn, to substantive knowledge levels. With regard to land use planning, the encountered knowledge level could be improved, particularly since the absence of sound land use planning for decades is actually urgently needed and welcomed by all responding stakeholders. Ministries can in cooperation with consultants, significantly and in a reliable manner contribute to rapid data / information production. There are good examples of consultancies since decades already. Usually, this information is still available (in report format) and accessible without formal barriers.

2.7.3 Data and Research Priorities: Information base for SLUP

Contemporary survey methods applying different remote sensing survey modes for data acquisition and GIS to store data systematically and generate relevant information are not used at RGB and District Offices. Some agencies systematically apply remote sensing and GIS methods and techniques, particularly SBB and increasingly Narena. At the NPO attempts are made through using a design program (Autocad). As compared to GIS this system has limited analysis and spatial mapping possibilities. These maps are incorporated in Structure Analyses of Districts which are composed by the NPO and are provided to district authorities on request; they fill an obvious spatial information gap and are considered quite useful. Some years ago a GIS was procured and training given in basic GIS-use. It is observed however that most activities are focused upon basic (thematic / utility) mapping. Analytical tools are not well developed, neither is spatial-economic scenario building in support of SLUP. However important the former, the latter are substantial factors for sound land use planning as well as to compile a National Development Plan. Moreover, thematic interpretation of data sources will vary from agency / ministry to agency / ministry. For certain aspects of applying the contemporary survey methods and techniques the same approach could be more or less feasible, particularly for base-mapping. For analytical purposes however, approaches may divert significantly. As such, each ministry / agency will require its own tailor made programmatic capacity building approach. However approached, remote sensing and GIS-applications are indispensable to facilitate SLUP at RGB and in Suriname. Since RGB has a similar spatial approach as districts have on their particular scale, it is to be preferred to train district officers simultaneously with RGB-staff. Moreover, their mutual stakes with concern to SLUP and their strong area-focus, oblige to such an approach.

There is evidence that the distinction between data and information is not always made in a proper way. This issue closely relates to capabilities to make concepts operational, select the correct (set of) variables and know to what extent variables are measurable, on what scale level (e.g. ordinal, ratio or just nominal scale e.g.) or when data are to be considered intangible. Next, which dummy variables could still provide information about the issue at stake. These basic aspects of land use planning surveys, research and related analyses have become rather obvious during interviews as potentially important capacity building activities.

Apart from just autonomous mapping, perhaps the first real gain to work in a Geographic Information System context is that surfaces and perimeters are immediately known as well, which is a huge step forward, particularly to local level land use planning.

Results fulfil a basic condition to and provide a proper starting point for sound land use planning Initiatives to systematically generate spatial or spatially referenced (among others social, demographic and social-economic) information, predominantly stem from government agencies. Participatory (PGIS, participatory GIS and Participatory-mapping), bottom-up initiatives using local (here: indigenous and maroon) people and their local knowledge to visualize areas / regions are still scarce, but initiatives have been fortunately taken. Examples are the mapping of southern sections of Suriname by CI-Suriname some years ago, using indigenous resources including their spatial and social-economic perception. Recently, the Upper-Saramacca area was mapped three-dimensionally. While using another increasingly popular approach to involve local Maroon-people in base-mapping their area, a physical 3-D model has been constructed³⁷. In

³⁷de Ware Tijd, 10 September 2014, Tropenbos International Suriname, WWF Guianas and the Technical Centre for Agricultural and Rural Co-operation (CTA).

the past decades, the NGO VIDS also executed some projects on community land mapping in the northern part of Suriname. Though participatory GIS is still at the stage of participatory mapping, it fills a long existing gap. Sound (participatory) land use planning assumes a sound knowledge of the area involved, primarily but not most significant, of its spatial structure and existing land use configuration. But participatory GIS/mapping first of all aims at bridging the often disturbing discrepancy between people's perception of space and spatial reality. It is not rare to conclude afterwards in planning practice that perceptions hampered the actual planning process and caused to skewed results.



Figure 1 Saramaka Peoples populating the 3D model with recollections from memory
(Source: *de Ware Tijd*, September, 2014).

In fact, the population and local level decision-makers were brought much closer to certain (participatory) procedural aspects of and practice of SLUP. It is worthwhile to emphasize that, given the already mentioned significant advantages, such participatory approaches may decrease costs significantly as well. Given the ToR which focuses at establishing a support structure for sound land use planning in Suriname, it is justified to take existing examples into consideration, which implicitly provide an assessment of actual methodological skills of different stakeholders. The examples above tools of information generation, to be applied frequently in future rural Sound Land Use Planning activities.

2.8 Stakeholders consultations, SWOT analysis results and conclusions

2.8.1 Stakeholder consultations

As part of the current project, a survey was conducted to collect information from government ministries and institutions with regard to land use planning. A wide range of ministries and departments therein including separately functioning institutes, like MI-GLIS but also the Meteorological Service, were requested to participate as stakeholders in this survey. From May 27 -28 2014, information sessions were organized at the Ministry of RGB to guide the participants through the questionnaire. Unfortunately, a greater number than was expected did not participate while arguing that they are not *directly* involved with land use planning activities (like MI-GLIS and the Meteorological Service of the Ministry of Public works).

It was unfortunate that these stakeholders did not use the opportunity to participate in the process, since they were identified as organizations with eventual valuable information for land use planning purposes. The value and multidimensional usefulness of their information for land use planning does not seem to be

clear to these organizations. This phenomenon reflects a rather limited perception of land use planning in a substantive sense, as is usually the case elsewhere too. Simultaneously and in general, it indicates a serious bottleneck to SLUP as well. Their decision not to participate is considered odd, since for e.g. the MI-GLIS, it is expected that one of their tasks according to the GLIS law is to deliver reliable land use data for land use planning. The Meteorological Service must be aware of their weather forecasting capability, the compilation of rainfall zones and their prediction ability, of the intensity and approximate duration of precipitation in different areas including trends thereof. This is valuable information for the nature of actions to be performed by a wide variety of farmer populations and for a.o. growth and production strategy of crops. It would be advisable to actively involve these agencies by explaining their potential value for sound land use planning.

A number of deductions could be made while analysing answers from respondents. The National Planning Office (under the Cabinet of the VP; now under the ministry of Finance) has a structural focus on National Development Planning and a considerable number of staff (about 30) devoted to this task, as compared to other ministries' tasks dedicated or somehow oriented towards LUP or, in a wider framework, spatial planning. Generally speaking, aspects of rural planning are at stake at the NPO, but more pronounced at the ministries of RO, LVV and (implicitly) RGB. The ministry of ATM does not indicate LUP as belonging to one of their basic tasks. Only indirectly facets of (S)LUP are dealt with. Particularly the ministries of OW and SOZAVO portray an urban centric focus. Both ministries have rather monothematic focus. Sozavo on housing and organizing the provision of facilities, OW on civil-technical implementation of predominantly road infrastructure elements, of which part is dedicated to residential purposes.

OW seems to have a strong inward, intra-ministerial focus as a result of their strong civil-technical organizational structure. This contrasts in part with RGB's outward, service providing, organizational structure. As a result, the internal organizational structure of RGB is less strong, though internal interactions have a high frequency. RGB seems to have somehow neglected capacity building for its own staff, but staff regularly participated in capacity building of other ministries. Though organizationally less strong, RGB appears to be institutionally quite strong. Strong dependency of other ministries from RGB with regard to land allocation issues is the key-factor attributing to this strong position. Finally, the ministry of LVV has a very well organized internal structure, but lost some impact during decades. Transferring Celos has affected LVV's autonomous research capacity from both a pragmatic and scientific perspective. This has been a longstanding tradition of LVV. Relations with RGB are intense for land acquisition for agricultural purposes and a strong dependency of the Soils Survey Department (which previously belonged to LVV). Striking is the strong infrastructure development function of LVV related to agricultural areas. This phenomenon counts also for the ministry of RO, but with more emphasis on infrastructure maintenance and management.

SWOT-results are deduced from questions that were raised in questionnaires for Ministries and District Authorities and from oral information provided by a number of district officers. Answers give information about land use planning issues as such, the organizational and institutional structure, availability of data, human resources, awareness of environmental protection, stakeholder participation and legislative support to (sound) land use planning. The SWOT -results consider relevant information of all respondents / responding agencies in relation to establishing a support structure for SLUP.

Table 4: SWOT results

SWOT	
Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Land and its potential use are core elements of LUP and cross-cuts through all RGB's activities. ▪ For land degradation prevention and biodiversity conservation, understanding Suriname's geo-diversity is a key-factor. RGB intrinsically has the potential to integrate the greater majority of all Geo-factors with own data and expertise at different Departments, with support of other ministries. ▪ The NPO is a potentially strong pillar to a support structure for SLUP as they are already involved in preparation of the national Development plan which also considers the environment and spatial development. ▪ Data (soil and land distribution), aerial photographs and reports useful for rural land use planning and natural lands analysis are available at RGB, LVV, NH and NPO. ▪ LUP related expertise, limited to their statutory tasks is available at RGB and NPO. ▪ An increasing overall awareness and conviction at all ministries that land use planning has to be strengthened. ▪ RGB has a potential role as key-player in land use planning due to its statutory duties and powers as well as expertise related to domain land management and land allocation. Key-departments for land use planning are sub-Dir. Spatial Planning, Direct. Land Management, Section Land Use Control, Soil Survey Department, LBB, Nature Management and SBB. ▪ Possibilities for Internal cross-fertilization are high at RGB (e.g. SBB with GIS-technology and remote sensing applications) 	<ul style="list-style-type: none"> ▪ The spatial planning department of RGB is not a directorate but an under-directorate, which reflects limited awareness of principal decision-makers of the importance of LUP during the past. ▪ The number of staff with a finished degree in LUP or closely associated discipline at Ministries is rather low. Staff with a relevant Geo-scientific background are strikingly scarce. RGB itself has lost considerable strength since most staff with a geo-background have retired ▪ There is limited space at the different ministries for spatial planning related functions, including RGB. RGB has essential but limited equipment and limited expertise staff in remote sensing and GIS. ▪ Chances to succeed are very limited when there is lack of qualified consultants at the start to support LUP initiatives on policy level. Country wide chances to succeed within an acceptable time frame are very limited without consultants with ample international expertise on (a.o.) preferably Development Cooperation mechanisms. ▪ SLUP take off and implementation is partly dependent upon new legislation, e.g. for District Authorities' structural and meaningful participation. To get the envisaged legislation approved will / may create a certain dependency from other ministries, such as the Ministry of Regional Development ▪ The present policy of RGB does not give highest priority to land use planning. Highest priority is given to land allocations. ▪ LUP is structurally perceived by ministries as an individual, ad hoc, land use allocation activity. An integrated vision is generally lacking. ▪ LUP is almost exclusively perceived as a land related activity and (sometimes) process. The

	<p>ultimate aim to increase prosperity and wellbeing to humans is hardly noticeable</p> <ul style="list-style-type: none"> ▪ Existing data (e.g air- and space borne data) is not used in the most optimal way, due to the lack of knowledge about its value for LUP. It seems also to be unknown that reliable socio-economic, demographic and social information can be derived from these multi-purpose data sources, which is cost-effective.
<p>Opportunities</p>	<p>Threats</p>
<ul style="list-style-type: none"> ▪ Reinforcement of relations with District Authorities (RO), consolidation of relations with other Ministries like LVV , NH, HI, SOZAVO and OW will support RGB`s coordinating function according to its task setting; ▪ DLGP has done preliminary decentralization work (administrative, financial management) and the attitude to spatial decentralization (more government offices, also ministries etc. in districts) is very positive at district level. ▪ At District level, land use planning has been generally welcomed, particularly once District Authorities understood their role in spatial-decision making and also their strength as a public stakeholder. ▪ RGB's possession of crucial data, gives a strong opportunity to further strengthen its coordination position for SLUP. ▪ RGB's responsibility with regards to nature protection and conservation is supportive to SLUP. It provides a great opportunity to manage protected areas within a LUP framework. ▪ Knowledgeable Staff of different Ministries may start knowledge transfer, e.g. from SBB and the Nature Conservation Department; a well-balanced programmatic approach is needed to avoid skewed cross-fertilization. ▪ Since only at the NPO training is said to be an ongoing activity, NPO staff should be involved with capacity building in (S)LUP at different ministries; their staff size and composition justifies this approach. 	<ul style="list-style-type: none"> ▪ Enactment of LUP legislation depends on political will which forms an obstacle. The more scarce land is, the greater the obstacle. ▪ The absence of legislation such as a Rural Planning Act will continue to drastically erode possibilities to maximize economic output and optimize living conditions through environmental protection ▪ the potential that conflicts of interest may arise when officials have access to better information about development opportunities. ▪ The fact that LUP has lagged behind economic and land development means that the pace of change will be an impediment to the introduction of effective SLUP in Suriname ▪ Budgets for land use planning activities are rather marginal. Due to the lack of knowledge at the decision makers about the crucial role of SLUP for development, it has not been a priority. ▪ Land use planning provides transparent and accessible information regarding land distribution which will constitute a restriction for decision makers. This increases the likelihood that decision makers will not diligently start the process to implement LUP. ▪ SLUP requires a participatory approach which is currently weakly developed at the ministerial level. ▪ Knowledge of the different approaches to LUP at ministries and District Offices is almost absent. This has a negative impact on LUP-practice

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| <ul style="list-style-type: none">▪ In practice only 6 more key-staff could improve the shortage in land use planning capacity and capability drastically at RGB.▪ Intensive capacity building and Consultants support may counteract the shortage of geo-scientific staff▪ Anton de Kom University and other training institutes like NATIN can provide training capabilities for LUP associated disciplines. | |
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3 Spatial context for sound land use planning in Suriname

3.1 *Spatial structure of Suriname: introductory remarks*

For the sake of clarity of concepts and terms to be used, some explanatory notes will be made first. “Sound” can *de facto* be interpreted as inclusive, which encompasses:

- participation, i.e. multi-stakeholder participation (three major stakeholder groups, Government, Population and Enterprises, including all institutions and organizations that represent them, who constantly interact, discuss and evaluate issues at stake so as to obtain mutual benefits) as well as
- integration, i.e. sector-spatial integration, thus a clear understanding beforehand of the impact of sector development on space including appropriate space requirements at the right location, meanwhile emphasize,
- environmental consideration, i.e. structurally taking the state of the (local) environment into consideration, avoiding land degradation, preserve biodiversity, and finally,
- spatial-economic balance, i.e. weigh against each other consequences of planned or foreseen autonomous development (which is generated through planned development) and intended economic output.

For land use it has been agreed upon to stick to the comprehensive FAO definition. Land Use Planning is defined as the: "Systematic assessment of land and water potential, alternatives for land use and economic and social conditions in order to select and adopt the best land use options, with a purpose to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future".





Figure 2 Suriname, a synoptic view of landscapes (Source: H.T.J. Lutchman, Geo-database Suriname, St. L+L)

Land use planning³⁸ is an iterative process which is carried out in a series of steps and, within a good governance framework, is based on dialogue and a *balance of interests* among all parties involved. This balance of interests has a very particular consequence. From experience with land use planning it is understood that the best Land Use Plans are those plans that all stakeholders grade with a 7 (on a scale from 1 to 10; 10 being excellent). To this description preference is made to add that land use planning supports good land management and vice versa. The Terms of Reference provides with a meaningful macro level dual structure of Suriname which is a good spatial frame of reference for the natural environment. In order to make the listing of useful definitions complete, a definition of spatial planning is given below.

Spatial planning³⁹ refers to the methods used by the public sector to influence the distribution of people and activities in spaces of various scales. Spatial planning includes all levels of land use planning including urban planning, regional planning, national spatial plans, and in the European Union international levels. There are numerous definitions of spatial planning. One of the earliest definitions comes from the European Regional/Spatial Planning Charter (often called the 'Torremolinos Charter'), adopted in 1983 by the

38Rock, F.; MRC-GTZ Cooperation Programme Agriculture, Irrigation and Forestry Programme, Watershed Management Component; Working Paper 05: Comparative Study on Practices and Lessons in Land Use Planning and Land Allocation in Cambodia, Lao PDR, Thailand and Viet Nam, 2004.

39European Regional/Spatial Planning Charter (often called the 'Torremolinos Charter'), adopted in 1983 by the European Conference of Ministers responsible for Regional Planning (CEMAT).

39 Rock, F.; See above, Footnote 13.

European Conference of Ministers responsible for Regional Planning (CEMAT): "*Regional/spatial planning gives geographical expression to the economic, social, cultural and ecological policies of society. It is at the same time a scientific discipline, an administrative technique and a policy developed as an interdisciplinary and comprehensive approach directed towards a balanced regional development and the physical organisation of space according to an overall strategy*".

Finally, **land allocation**⁴⁰ is the process of assigning land use and property rights to individuals, groups, communities, private or public entities for improved land management.

In the attempt to get a clear holistic view of Suriname stems from our primary intention to plan land uses on locations that accommodate these uses best. Land use planning is by definition done from big to small, from macro to micro level. In order to pursue this, a clear understanding of the components that Suriname consists of is necessary: main components and sub-components, both natural-spatial and social-spatial. Understanding their interrelations, the economic development possibilities and limitations they provide us, occurring processes therein and resulting dynamics, both anthropogenic (evaluating economic possibilities for use) and nature induced (deterministic economic use). This, in its turn, will provide the essential time-space dimension which will (most) probably enhance the ability to plan better. Better land use planning may finally result in sound land use planning. Understanding the spatial differentiation starts with a proper overview of the entire country. This will enhance understanding of the component parts.

Preference is made to use a map which depicts an adapted classification of landscape components. This adapted classification is derived from existing soils and geomorphologic classifications, which all use the geological (genetic) main landscapes as point of departure. Applied research efforts since 1978⁴¹, particularly on land use changes in rural-urban fringe zones and coastal morphological dynamics⁴² have led to this adapted classification.

3.2 Natural Spatial Structure: main processes and dynamics

Two broad types of land use can be distinguished:

Active land use resulting from the three main functions employment / work, housing, and recreation-passive land use like nature parks, amenity green space, protected areas. Attention will be paid to both types. Since Suriname consists of at least 95% of natural space (this is non-urban as well as non-cultivated land) passive land use will get ample attention. This is particularly related to the specific objective "living in harmony with nature".

⁴¹Lutchman, H.T.J. Spatial - temporal land use transformations in the rural-urban fringe of Paramaribo from 1956 to 1978, examined in a Remote Sensing-GIS context, Thesis Faculty Human Geography and Spatial Planning, Free University, Amsterdam, 1980 .

⁴²Lutchman, H.T.J., Coastal-morphological dynamics in Coronie, thesis Applied Geomorphology, Int. Institute of Geo-Information Sciences and Earth Observation (ITC), Dept. of Geomorphology, 1979.



Figure 3 Dual natural spatial structure of Suriname: Coastal Plain (dark) and the Interior (light) from a geomorphologic perspective.

As can be observed, these are clearly distinctive compound landscape complexes with significantly differing properties and land use planning issues at stake. Land uses are highly diversified. Suriname is hardly urbanized; not more than 2% of the entire territory is built-up and just approximately half of this is urban. Not more than 3% is rural-agricultural, thus part of the social-spatial structure. The remaining 95% of the territory is, composed of natural landscapes with a variety of characteristics, each with their own possibilities and limitations to land use planning.

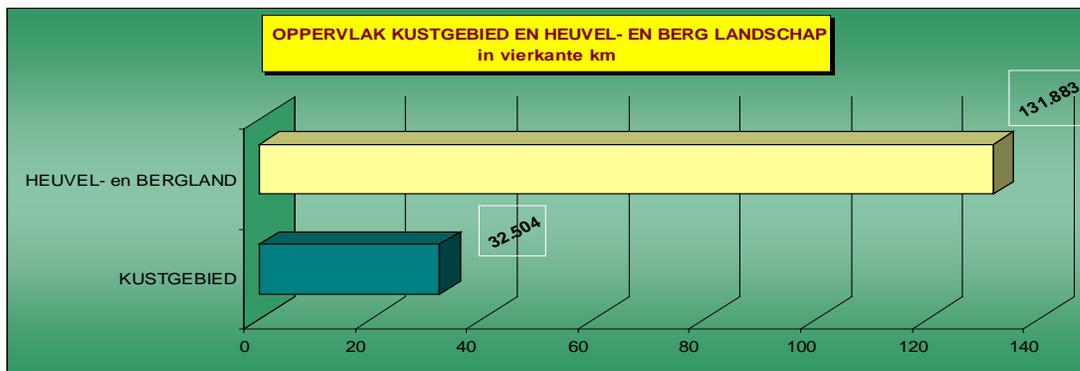


Figure 4 Surfaces of the Coastal Plain and Interior as compared to Suriname's total surface (Source: Geo-database Suriname, St. L+L).

Hence, however important urban and sub-urban areas are, Sound Land Use Planning in and of Suriname evidently deals primarily with natural landscapes. Subsequently, a sound understanding of the natural spatial differentiation is a must, particularly since land degradation and biodiversity issues are prominently at stake in Sound Land Use Planning. Moreover, it is the firm opinion of all institutional stakeholders of GOS and the private sector⁴³ that consolidating the state of natural lands and water with a

⁴³Result questionnaires to LUP-stakeholder ministries, questionnaires District Officers, continued oral interviews

high quality and uniqueness, is to be prioritized. Therefore, more landscape components that constitute the natural foundation from which to start land use planning practice are distinguished. These are, from North to South:

- **Young Coastal Plain (main landscape; marine deposits)**
 - Mudflats with sand and shell deposits (highly dynamic landscape component with drastic, alternating, impact on the coastline ecosystems).
 - Tidal lands (increasingly dynamic, surface increases quick); salinity increase due to sea level rise generally outbalanced by freshwater from precipitation, gradually causing ecological changes too).
 - Depression landscape (partially continuous inundations or very high ground water table; some unique landscapes and habitats; low accessibility, high investments required for a. o. agro- and other land uses).
 - Young clay landscape with sandy and shell ridges (relatively old; area of lowest investments for agro-land uses).
- **Old Coastal plain** Main landscape; marine deposits; much older, consists of 2 landscape components, not subdivided as such);
- **Savannah Belt / Zone** (much older; eroded material from mountainous parts of surfacing Guiana Shield);
- **Interior:** consists of mountainous surfacing Guiana Shield (old to very old; residual soils; "tropical rain forests"). In contrast to the Young Coastal Plain and Savannah Belt, the Old Coastal Plain is strongly dissected and fragmented. This phenomenon may impose limitations to large scale land use activities. The Young Coastal Plain consists for a relatively large part of almost frequently inundated water bodies. Besides, the coastline area is highly dynamic and experiences salt water penetrations and increasingly permanently inundated land surfaces.

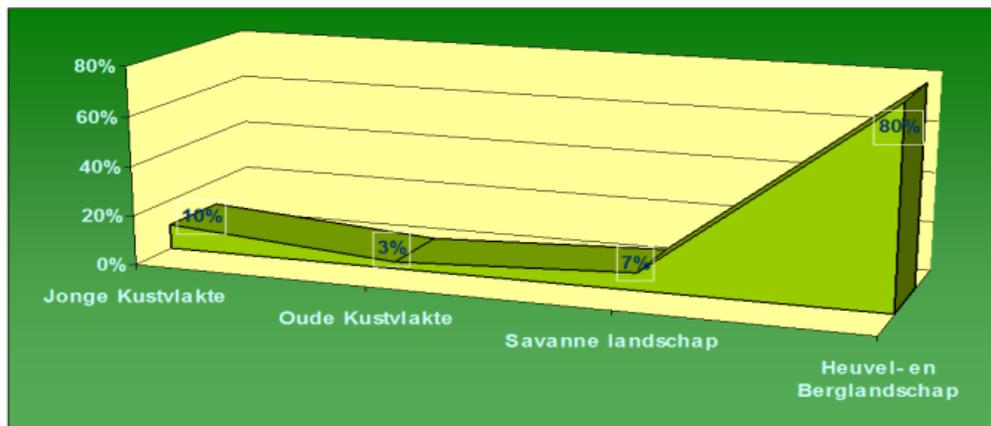


Figure 5 Main landscapes in percentages of the total surface of Suriname (left), 2008.⁴⁴

whenever possible and general opinion derived from newspaper articles , travel agents, etc.

⁴⁴Lutchman, H.T.J., Geo-database Suriname, St. L+L", 2008.

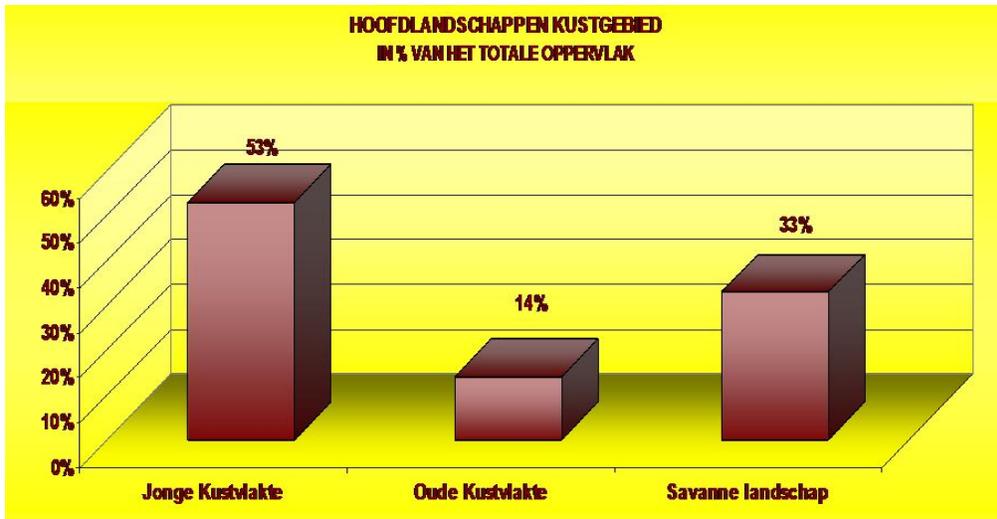


Figure 6 Main landscapes of the Coastal Plain in percentages (right), 2008.45

As requested in the Terms of Reference the Coastal Plain has to be analysed in detail, whereas the Interior could be analysed broadly. With reference to certain effects of global climate change, intrusions of water have been considered. Their impact on Sound Land Use Planning is manifold.



Figure 7 Coastal Plain components, dynamics and land attribute changes: salt (light blue arrows) and fresh water intrusions into the most valuable agricultural zone.

The light green coloured zone is considered most valuable not only because of the soil properties and fertility, but also because it represents the zone within the Young Coastal Plain which is most accessible relative to the main infrastructure and has least investment costs for agricultural production.

⁴⁵ Refer to Footnote 18.



Figure 8 Impact of sea level rise with 1 m. (computer simulation based upon real terrain heights).¹

As can be deduced for the above computer simulation which is based upon real heights, the impact is most pronounced in the Nickerie district where all built-up areas will be flooded by brackish to salt water. But all coastline districts will be affected. These salt water intrusions will cause land degradation and may severely affect land use patterns and urge population and land use shifts to the south. The above indicated processes resulted in a.o. the following diagram below.

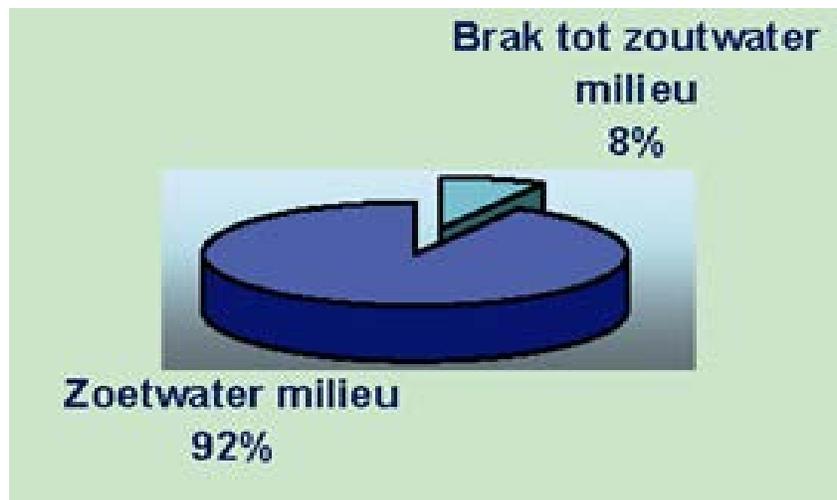


Figure 9 Brackish to salt water as compared to fresh water environments in the Coastal Plain
(Source: Lutchman, H.T.J., Geo-database Suriname, St. L+L", 2008).

The Surinamese territory and far more than believed, the Coastal Plain, is becoming increasingly prone to land degradation. Several factors account for this. A promising approach to understanding "land" and land units is from a geo- or landscape factor⁴⁶ point of view. Geo- or landscape factors are: relief, climate and

⁴⁶Berendsen, H.J.A., Landschap in delen; overzicht van de geo factoren, 2005.

air, soil, water, vegetation, fauna (wildlife) and human beings. Of all geo-factors, unfortunately human beings unfortunately did not prove to have a consistent supporting impact on preventing degradation of natural landscapes and their wildlife, also outside the Coastal Plain. But climate change is a recent factor of which the impact on Suriname requires ample consideration now. Moreover, intended investments resulting from national development objectives (increased agricultural production; "food barn" function of Suriname for the Caribbean) in rural areas and thus the effects of a small but potentially strong stakeholder group must be considered conscientiously here within the context of sound land use planning.

Of the different landscape components, each have specific possibilities and limitations to land use planning. For sound land use planning (SLUP) it is of particular importance that our spatial reference is correct and detailed enough. The subdivided relevant landscape components, some of which are not considered as such, experience a tremendous impact as a result of climate change (sea level rise and increased precipitation) which results in ecological system changes and possible reduced agricultural production.. Moreover, the specific impact of coastal dynamics needs ample consideration. Also more off coastline landscape components however are subjected to a number of increasingly obvious changes due to increased precipitation, run-off and subsurface water flows. Consequences for particularly sound land use planning, but also increased investments and use potential of landscape components, change gradually. This may cause renewed attention for investments at other locations on different landscape components which become (far) more vulnerable now to the effects of actions of people, or, otherwise formulated: of the geo-factor humans. Part of the Coastal Zone with both fertile soils for agricultural purposes and relatively low infrastructure investments, located on average at both sides of the East-West connection road, is gradually shrinking due to salt water intrusions from the North and expanding surfaces of the Depression Landscape in the South⁴⁷ (This phenomenon requires ample consideration within the context of the agricultural production objective and related space requirements. Field observations in Coronie however revealed that the impact of precipitation in combination with better drainage resulting from coastal protection works (Totness-Friendship area), caused desalination of areas that previously suffered from frequent coastal inundations and increased soil salinity. There are indications that the brackish zone⁴⁸, partly alongside (Nickerie - Coronie area) and mostly directly bordering basically to the North of the East-West Connection road in Saramacca and Wanica, experiences a process of desalination. This could recently be clearly deduced from relatively significant changes in the vegetation composition (decrease of *Avicennia germinans* alongside the road, obvious decrease of *Eliocharismutata* which is more salt resistant and a significant increase of *Cyperus articulata* which is less salt resistant, increasing growth of *Blechnumindica* (also under previously homogenous *Avicennia* vegetation) and a significant reduction of salt resistant vegetation (like e.g. *Sesuviumportulacastrum* and *Batismaritima*, of which particularly the former occurred widespread north of the E-W-connection road) on open spaces. In conclusion, as it appears now (based upon mere observations this year and a recognisance flight in 2013, the fresh water area seems to be expanding actually at the cost of previously saline and brackish soils, as a consequence of increased precipitation. Still, as a precaution, we refer to the Integrated Coastal Zone Management ⁴⁹ report of 2009, in which mention is made of brackish groundwater in aquifers around Paramaribo, of "saline intrusion

⁴⁷ Observations H.T.J. Lutchman during regular terrestrial and air- and space borne surveys since 1978, for the Coronie - Nickerie coastal zone; refer to footnote 17 as well and other studies executed by P. Augustinus, S. Naipal and P. Teunissen.

⁴⁸ Pons, L.J. Rapport bij een zeer globale bodemzout kaart van de Jonge Kustvlakte, Dienst Bodemkartering, 1964.

⁴⁹ Integrated Coastal Zone Management Plan Suriname; Final Assessment Report, Implementation of a Pilot Plan for the Paramaribo-Wanica Region, pg. 20, 2009.

which will impact on agricultural areas and water supply". These impacts "are aggravated by the El Nino events". The report further mentions that "increasing saline intrusions may have dramatic effects on the food chain and production". With regard to fishery, farming and agriculture/horticulture, respectively "loss of spawning grounds and fish stock, loss of meadows and grassland and loss of production due to lack of fresh irrigation water / ground water" may occur. Given possible negative effects of global climate change, like for instance possible saline intrusions, aquifer contamination and increased precipitation phenomena, well functional District Water Boards will be required as soon as possible. Besides their envisaged conventional tasks, their support to SLUP may prove to be inevitable. Trained District Officers may timely deliver valuable information due to their proximity to occurring phenomenon.

Sound land use planning should be continuously attentive to protect landscape components that were previously perceived as not interesting and thus pro-actively consolidate their status. This can well be done through monitoring, in case such landscape components and their associated wildlife has been identified timely as specific monitoring objects and eventually given a label "vulnerable". Hence, the more detailed knowledge there is about spatial entities that are being referred to, the more specific pro-active actions can be taken to protect the environment.

3.3 Social-spatial Structure: main processes and dynamics

The actual main social-spatial structure of Suriname has some peculiar characteristics which are not highly favourable to spatial-economic development. Sound land use planning could improve this main structure, though a new macro level approach would be required and possibly a relatively long way to go.

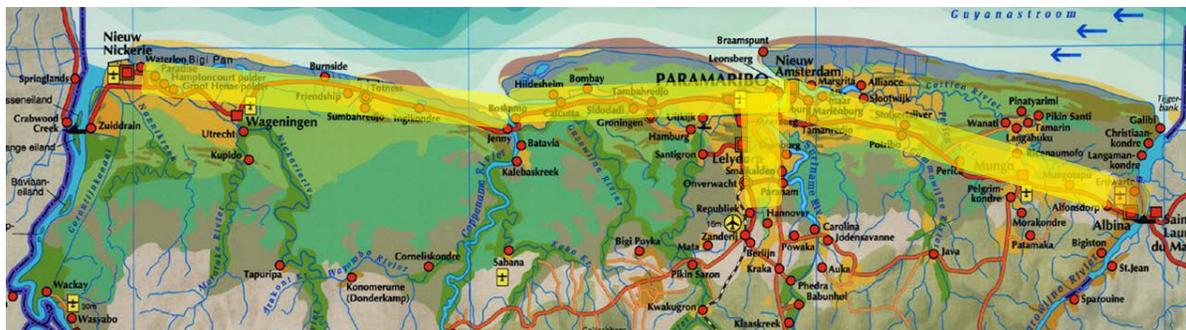


Figure 10 Main Road Infrastructure and related Social-Spatial Main Structure of the Coastal Plain (yellowish parts).

The most prominent characteristic of the social-spatial structure of Suriname is, on the one hand it's primate city structure with just two small (coast and near coast) towns at the east and west national border fringes, and on the other hand its linear development characteristic since early occupations of Suriname. Linear development of plantations alongside the coastline, alongside rivers in the Coastal Plain and now in the Interior, stemming from entirely different objectives, alongside roads, from main arteries to third category roads in the Coastal Plain. Due to obvious plantation-economic reasons, already during early colonial occupation, linear development has been encouraged, , meanwhile laying the foundation for a striking primate city structure and early border town development directly alongside the coastline. The primate city structure is characterized by one major dominating city as distribution centre of which the size by far exceeds that of the other urban centres. The primate city Paramaribo is still the dominating politico-

administrative decision-making centre, thus supporting a striking hierarchical decision-making structure since early days as well. This also attracted settlers. It constitutes the only real but since decades malfunctioning spatial-economic system facing immense management problems, that impose a yearly recurring and disproportionately heavy financial burden for the State budget. Containing the major seaport, the increasingly busy local airport and being *the* commercial-industrial centre of Suriname, this rapidly urbanizing area received substantial government funding for infrastructure. A significant part of this infrastructure was road infrastructure for new residential areas, which boomed at the outskirts. Paramaribo still accommodates all ministries and the seat of government. The government is still the biggest employer. This and the aforementioned characteristics of the capital city contributed to a relatively massive influx of rural people. Autonomous urban population growth added to the actual almost unbearable pressure on transportation, housing, water and electricity supply, meanwhile creating a widening gap between supply and demand.

This situation is aggravated by Paramaribo's specific location on large tracts of previously marshy land on which a wide variety of formally approved land subdivisions for housing so as to decrease the demand, are accommodated. These land subdivisions for housing resemble relatively rapid and almost continuous urbanization on different scales through uncoordinated actions of a multitude of land suppliers and land development actors⁵⁰.

⁵⁰ Land subdivision mechanisms and housing schemes in Greater Paramaribo, Paper H. Lutchman, International Urban Land Management seminar, Institute for Housing and Urban Development Studies, 1987.

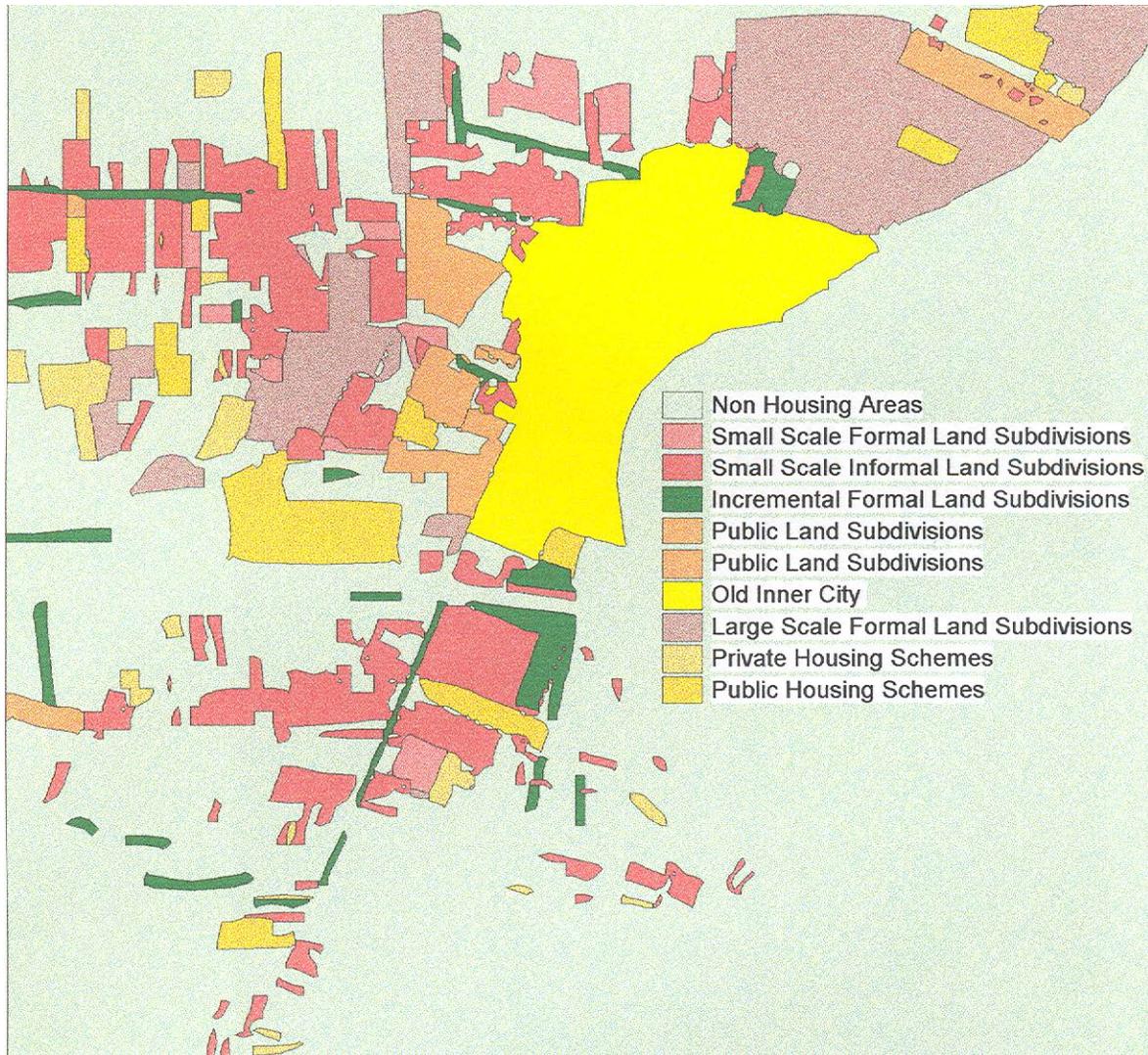


Figure 11 Land subdivisions and housing schemes which spatially structured Greater Paramaribo, 1985

They constituted the land market for a variety of demands for land, basically urbanizing land, during the past fifty years. These physical-morphological development paths gave rise to structurally restricted and unfavourable development opportunities causing subsequent inevitable bottlenecks to sound land use planning from a social-spatial perspective. Contradictorily, from a natural-spatial perspective a great opportunity occurs to prevent land degradation through consolidating existing high quality natural landscape elements, just because of the skewed main built-up structure. A consequence of this is the dispersion of more or less linear built-up areas and associated development of the main social-spatial structure. Indeed, the T-structure of the country's main infrastructure which tends to develop into an H-structure gradually in the Coastal Plain, offers multi-dimensional possibilities to protect natural landscapes and wildlife on the one hand. But on the other hand it may impose (severe) restrictions to spatial-economic development. Creating awareness of these basic phenomena will supposedly evidently enhance understanding of possibilities (concerning nature conservation) and limitations (concerning spatial-economic development potential) to sound land use planning.

Because of the peculiar structure of the country's social-spatial environment, a favorable settlement network, including several settlement size categories and favorable spheres of influence, containing favorably shaped catchment areas for enterprises and locations to facilitate enterprise settlement, is not developed. This phenomenon requires ample attention in the intended sound land use planning exercise as part of the more complex spatial structure which is aimed at.

From a settlement point of view as such, a distinction has been made, resulting in the following categories of cultural, comprising non-built-up, mainly (previously) agricultural areas and built-up areas, as compared to untouched natural environments. These categories are, from entirely "open, not built-up" natural environments to densely built-up cultural environments:

- entirely natural, rural areas (in- or excluding dispersed small settlements).
- rural areas with dispersed settlements and agricultural land use, market oriented induced settlements and subsistence farming induced settlements
- sub-urban areas, rural-urban fringe zones and finally (more or less densely built-up) urban areas.

It is of paramount importance for land use planners and decision-makers on all levels to be aware that the most dynamic areas, particularly in developing countries, are the rural-urban fringe zones. It is also worthwhile understanding that the bigger the settlement the wider the Rural-Urban Fringe is. Fringe zones of relatively big urban areas consist of a narrow Inner-Fringe which is mostly urbanized and exhibits less dynamics of smaller land uses while experiencing a process of gradual stabilization. Bordering outwards there is a wider fringe zone, the Middle Fringe, which is most dynamic. It is characterized by rapid land use conversions, land price fluctuations and stakeholder interactions. This middle zone borders at the outer side to an even wider Outer Fringe, which is most rural and awaiting land use dynamics to come.⁵¹ Especially the Middle Fringe and inner part of the Outer Fringe are preferred playing grounds for land speculators. Their actions give rise to a wide variety of very small to large private land subdivisions aiming at different socio-economic groups and result from associated, more or less sophisticated, land supply mechanisms. These areas continuously transform, with a pace that significantly exceeds land use changes in core-urban areas. The area referred to reveals intense clashes of interest due to competitive claims on land by a wide range of land market actors. Physically, the Rural-Urban Fringe exhibits fierce collisions between intruding urban and, as a result, increasingly unstable rural land uses of which environmentally valuable parts need to be preserved. Agricultural uses of which horticulture plots are most resistant to land use conversions contrast against the relative ease of use conversions of rice fields, the size of which by far exceed the size of areas in transformation in entirely urban areas. Finally, this zone reveals swift alterations of land in use to, non-use, These temporarily dormant areas within this dynamic transformation zone are a significant indicator of land speculation. The spatial distribution of existing agricultural allotments, the inherent distribution of freehold land and the lack of a planned approach and associated relaxed control mechanisms of the ministry of OW to guide further land subdivision which was reinforced by a huge demand for housing (or land for housing), resulted in rather irregular mosaic-like patterns of urban expansion for Southern and Western parts of Paramaribo. Like in large Northern sections of the capital, most of these residential areas face rather serious water management problems. Besides, the

⁵¹Lutchman, H.T.J. Method for sequential analysis of spatial development in a rural-urban fringe zone, ITC-Journal, 1984, (no. 2).

lack of land use planning is the real cause of the existence of unfavorable land use configurations that can support a strong urban spatial-economic system. Hence, one should be alarmed now once sound land use planning is at stake. Monitoring the phenomenon through an automated GIS- and Remote Sensing-based Early Warning System, is a requisite for swift decision-making using a likewise automated Decision Support System for proper land allocation by the ministry of RGB.

A number of issues⁵² have to be thought of once sound land use planning is attempted to be brought into practice by the Ministry of RGB. The reason is contained in the generally contrasting objectives between the ministry of Public Works and RGB (as is the case globally with ministries focused upon road and water infrastructure provision, their management and with an urban design biased planning approach, as compared to spatial analysis-and rural land use planning-based ministries). Moreover, RGB should be aware that the Rural-Urban Fringe is the most dynamic and a continuously shifting transition zone confining urban areas that, under pressure of activities of land brokers / land sub dividers and the associated building and construction sector, constantly attempt to penetrate the rural scene at the cost of valuable soils. This urbanizing zone needs specific and adapted land management and land use planning approaches. Also, suburbanizing areas (in a proper sense) require carefully to be looked at as well by all relevant ministries. As to the role of the typical infrastructure and infrastructure implementation and maintenance ministry of OW, the score related to infrastructure is at an acceptable level of success and is drastically increasing, thanks to very recent, rather impressive, initiatives. It should be remarked though, that some road infrastructure is superfluous on different uninhabited locations where roadsides function as unauthorized garbage dumpsites. The aforementioned phenomena and this one evidently resemble poor urban land use planning at best. As far as other intended urban planning issues and particularly land subdivisions are concerned, the rate of success is unfortunately far less impressive for the about 40 years since its promulgation.⁵³ Moreover, convincing prove can be delivered that regulations of OW, partially with concern to big and particularly small "inner city" land subdivisions, do substantially benefit large entrepreneurs at the cost of small ones. These are basically local entrepreneurs. Regulations are evidently based upon morphology and geometry. Socio-economic reality of citizens who have abilities to start small enterprises seem to be entirely disguised. The actual regulations embed unequal opportunities, which is a concern. The ministry of Public Works, from its initial inauguration, breathes a pronounced infrastructure and building (control) atmosphere from a civil engineering and architectural, urban *design* perspective. So does the dominating professional culture. Understandably, caution is required as to the potential of the section urban planning of OW once land use *planning*, let alone spatial planning, is prominently at stake.

The aforementioned government stakeholders (RGB, LVV, RO, NH to mention the main actors) have clearly overlapping stakes according to their tasks. This culminates in a synergetic planning context. The ministry of NH could potentially play an even more crucial role as a provider of significant components of infrastructure. A mind shift could better balance the importance of roads as against that of rural electricity and, most important, drinking-water to rural settlements and suburbanizing areas. Coordinated efforts could perhaps guide suburbanization in preferred directions while safeguarding fertile soils as a valuable natural resource from being unnecessarily consumed for land subdivisions for residential purposes. It should be considered a firm opinion that such an approach will quickly gain support and will be included in

⁵²Lutchman, H.T.J. Monitoring land subdivisions on the fringe of Paramaribo, ITC-Journal, 1987 (no. 3).

⁵³Integrated Coastal Zone Management Plan Suriname; Implementation of a Pilot Plan for the Paramaribo-Wanica region, pg. 52

contemporary land development policies to avoid land degradation and protect and preserve scarce landscape elements including their biodiversity. Particularly the frequency of occurrence of ridges have substantially decreased in the past 50 years. (sub)Urbanization and sand and shell excavations, are more often than not directly associated with allotments for housing. They prove to be evident causes of soil (ground) water and surface water pollution through (illegal) waste dumps.

Hence, the above arguments deserve careful consideration for swift sound land use planning practice without unnecessary institutional and organizational bottlenecks.

Establishment of a coastal buffer zone is advisable to preserve the greenbelt to the north of the capital city⁵⁴ and prevent urbanization into the coastal wetlands and mangroves as well as the allocation of agricultural land uses. However, it is arguable whether such a land use planning approach should be part and parcel of the Urban Planning Act or be incorporated in a new Rural Planning Act which is even more required and entirely lacking so far. Indeed, again and as usual, proposed solutions are Paramaribo-centric, as the hierarchical decision-making structure itself is. One would wonder if an Urban Planning Act, will yield any result now since the full implementation years already is omitted. Keeping social-spatial developments in mind on national scale level, a buffer zone with restricted land use possibilities between the Old Coastal Plain and the Interior (rain forest zone, thus covering parts of the Savannah Belt) could be thought of so as to avoid swift occupation of Savannah lands now since almost the entire Young and Old Coastal Plain seem to have been allocated already.

3.3.1 Spatial-economic structure and land use planning

The dominant active land use type in urban areas is residential, a predominantly non-productive use of land. That's why allotment regulations of the ministry of Public Works played a key-role in (ill-situated) urbanizations, though the role of the ministry of RGB (since 2000)⁵⁵, usually with concern to alterations of land allocations shouldn't be ignored under all circumstances. However, the actual understanding is that final approval to assign residential functions with a very limited direct production capacity to tracts of land is given by the Public Works ministry. The dominant active, productive, land use type in rural areas is agriculture, with varying productivity levels to the national economy. The spatial-economic structure results from location attributes of economic activities. In predominantly rural areas, a frequently occurring active land use type is farming. Besides market opportunities and other relevant factors which are assumed to be known and may largely determine revenues per areal unit, a key attribute group which determines decisions of farmers and agricultural enterprises are local site resources: on-site natural resources including social and economic resources at that site and its direct surroundings. Knowledge of these resources constitute sub-domains of certain ministries and other institutions, who will be key-actors in planning these and related rural land uses. This type of systematic approach to land use planning as such and particularly rural land use planning should be common practice as a result of this SLUP initiative. Usually, (potential) economic activities foster development of and give shape to the main infrastructure. This is also evident in Suriname for the first main infrastructure development phase. The second infrastructure development phase of

⁵⁴ Integrated Coastal Zone Management Plan Suriname; Implementation of a Pilot Plan for the Paramaribo-Wanica region, pg. 52

⁵⁵ During about the previous 45 years, the ministry of *Opbouw* ("Development"), up to about 1980, later carrying another name, ministry of NHE, *Natuurlijke Hulpbronnen en Energie* (Natural Resources and Energy), none with a sub-directorate of Spatial Organization / Planning, but with a land use control section.

Suriname's main infrastructure has been predominantly influenced by expectations of industrial and energy generation opportunities in the Bakhuis mountain range. This new economic outlook seems to have incentivised the southern East-West-connection in the sixties, which is actually further developed eastwards now to the Nassau mountain range, also with a clear economic incentive. It is obvious that main infrastructure "planning" as such was hardly practiced. Instead, main infrastructure followed promising economic opportunities. These unplanned development of road infrastructure which opens up new areas can lead to the degradation of surrounding areas by unauthorized unsustainable land uses.

Through sound land use planning, effects of economic benefits on settlements can evenly be distributed across regions while protecting the environment. It also contributes to another objective of the Government which is aimed at reducing disparities in levels of human prosperity through easier diffusion of technological levels from more developed to less developed regions. Dedicated planning of infrastructure to connect regions within a rural settlement planning and planned settlement growth and regional development context, instead of designating huge ribbons as "residential" in an effort to control autonomous growth, is therefore a must. Unless economic circumstances or for instance safety issues so dictate, people do not migrate easily; people are usually culturally bound to the area they are used to living in. Enterprises exhibit far greater spatial mobility and dynamics. Natural resource exploitation attracts enterprises to regions, even to peripheral ones. Infrastructure follows movements of firms or result from national government objectives to be realized. The planned north-south connection to Brasil to which the Tapajai project which has been halted was related, underpins the aforementioned explanatory trajectories of firms and infrastructure.

3.3.2 National objectives and major economic activities

This paragraph is certainly not meant as an exhaustive summation of all economic activities. Only those activities with a possible negative impact on the environment and which result from national objectives of the GoS, in as far as obvious space consumption is at stake as well, will be dealt with. A distinction is made between objectives to increase production and those related to services. Also the degree of space consumption of different economic activities and their impact on possibilities and limitations to plan are distinguished. On the one hand large scale mechanized farming is a clear objective for certain farming activities, whereas on the other hand (very) small scale, computer-technology supported, intensive, green house horticulture just outside population centers (markets) or nearby (international) distribution centers are a trend. Agriculture transforms at a high pace and rural land use planning which is prominently at stake in this SLUP project, should consider this conscientiously. So far relatively large tracts of land are utilized for agricultural and forestry purposes. In contrast, mining is generally more often characterised by high income generating point locations.

The national development objective to increase agricultural production, induced a number of preparatory initiatives like the IDCS' land suitability analysis and mapping project for the Young Coastal Plain, identification of sites for oil palm production, for dry land rice farming, basically in the Old Coastal Plain and small scale activities related to horticulture on a relatively wide range of (existing agricultural) sites. To further stimulate industrial activities in general (related to expected economies of scale of the Paranam activities) at least one site has been identified near Paranam to establish an industrial estate; RGB purchased a nearby site as a form of land banking, which is reserved for related or future support activities and services. Public (turn- key) Housing projects are part of the National Housing Plan and has been boosted on a

relatively wide range of sites, basically almost all over the Coastal Plain (mostly in Para, Commewijne and Wanica). For new housing estates, increasingly frequent initiatives are taken by District Authorities in cooperation with the private sector, again in Para, Wanica, but also Nickerie). These initiatives give evidence of both regions where there is a housing shortage, where land was not allocated or where land could be purchased by the GoS. It also gives proof of the fact that land scarcity will increasingly be a dominating factor for locating housing estates and will thus more often than not impose a bottleneck to rational decision-making in support of sound land use planning.

Wood concessions are widely distributed over the Coastal Plain Forestry Belt. After exploitation, their location may create opportunities to other forms of SLUP, though the duration of concessions may impose a bottleneck to certain development opportunities. This requires evaluation and possibly new legislation to be proposed. Actually, wood exploitation activities in concessions seem to be well under control of SBB.

Gold mining, particularly by small-scale miners (pork knockers), is to be regulated⁵⁶ and controlled; it partially remains a relatively high income generating, rather widely scattered, small scale economic activity of which exploitation methods are a concern. Gold mining is commonly practiced, whether legal or illegal, often on a small scale per location, but on a rather wide range of locations as a whole. Gold is basically explored from fluvial sediments, both on land as well as in creeks and rivers. Small scale alluvial gold mining (of pork knockers) develops in linear mining in narrow streams (creeks), searching for more profits, but with a (potentially) higher negative impact upon the environment. Due to the relatively high mobility of these miners, the "floating" nature of these activities of mainly uncontrolled small scale activities, are a reason for concern. Evidence has been provided by the District Commissioner of Brokopondo⁵⁷ that multiple activities are being undertaken at local level (like identifying still unknown small scale miners, organizing meetings, explaining possible negative effects of their activities to nature) while attempting to get an up-to-date overview of negative effects of possible pollution of land and water.

⁵⁶ Living Guianas Report, The State of the Environment, 2012

⁵⁷Personal communication with Mrs. I. Pinas, DC of Brokopondo (Aug. 2014)

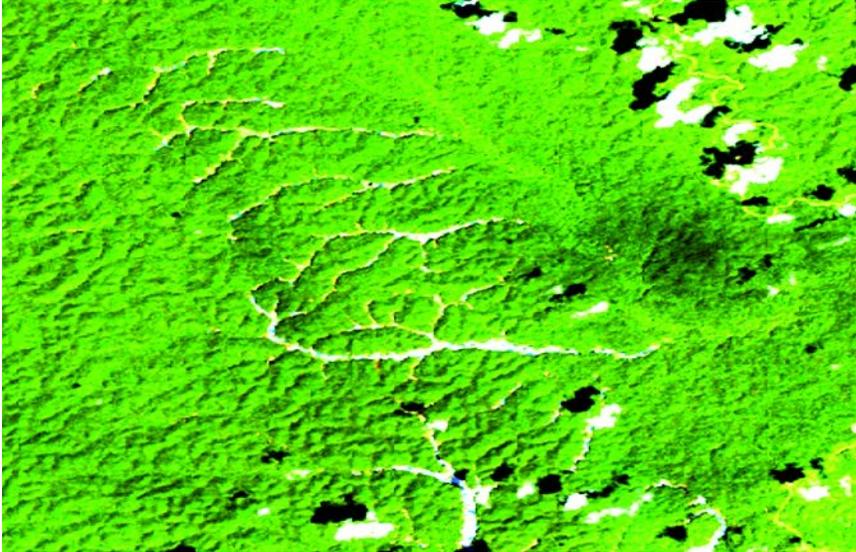


Figure 12 Example of Spatial distribution of gold mining concentrated in the eastern part of Suriname, 2000. (refer to whitish, stream-like, curved-linear, pattern)

In past because of a lack of (up-to-date, detailed) topographic and thematic maps, the magnitude of the spatial distribution, the scale of operations and transformations through time of small scale gold mining is not sufficiently known to government officials, including District Officers. This imposes governance and management problems. In general, time consuming distances that have to be covered over waterways and limited roadways on land which are hardly accessible to motorized vehicles, often retard frequent field visits for enforcement and proper land management. The scale of large scale gold mining operations is increasing too ,while efforts towards environmental management and control receive more attention.

3.4 The Interior: a broad context analysis

3.4.1 Introduction

This paragraph is merely a first approximation to creating a viable spatial development context for SLUP in the Interior. The Interior consists of largely undisturbed rain forests with a high and unique biodiversity and inviting landscapes. At the same time threatened by scattered and partly uncontrolled small scale gold mining with wide ranging polluting effects. Apart from the gradually expanding tourism sector, which is basically clean and possesses great potential to grow and to generate steady incomes to many, the nature of several other economic activities in the Interior, is a reason for concern. In fact, many prevailing economic activities cause damage to the forest and are the cause of land degradation which requires ample recovery time.

Shifting cultivation causes river-ribbon development over long stretches alongside rivers. Locally, the impact of logging seems to grow. Illegal logging seems to be a concern in the western part of Suriname, S-W of Bakuys mountain. The areal extent of plots would be however small and plots are scattered.⁵⁸ The

⁵⁸Own observations on satellite images, 2006 and internal information at RGB, Oct-Nov. 2007.

environmental impact of gold mining (e.g. mercury use) in creeks which drain into main rivers could become more disastrous for large areas. Rivers are used intensively, not only as the main traffic corridor, but also for daily bathing by many village inhabitants and for cloth washing purposes. The Government established a special Unit under the Office of the President to make an inventory of small scale gold mining activities and to control and reorganize them. A rather difficult and costly task, e.g. because of the relatively high mobility of pork knockers.

In general, a lack of monitoring, control equipment and skilled staff tasked with land management and land use planning, are a real concern for development of the Interior. Support to institutional strengthening of NIMOS (the National Institute on Environment and Development), currently tasked with guiding impact assessment processes, can be regarded as a positive contribution to understanding the impact of certain land uses. However, such efforts should be combined with accelerated implementation of environmental laws and regulation. Other key areas, such as the demarcation of indigenous and maroon lands and the creation and better management of protected areas deserve the needed attention⁵⁹.

3.5 Settlement pattern, land use distribution and processes that limit Land Use Planning.

In the Coastal Plain, non-systematically planned land allocations prove to be a barrier to "regular" sound land use planning practice. The situation in the interior is somewhat different. The land which the Indigenous and maroon communities have lived on for centuries, is not being protected by the prevailing formal legislation. The issuance and management of land in the interior are governed by two systems; the traditional customary system and the national legal system in force. For decades the Government did not interfere with the traditional system, but since the occurrence of development activities in the areas where these communities live, their traditional system has been threatened. Ownership of the land where these communities live has become their primary concern and was frequently brought up for national discussion.

Settlement first started on islands in the Interior. Later, extensions of settlements as well as farming activities diverted to the main land alongside the river. The river functions as the main transport way, a "roadway" on water. Likewise, for this "roadway", space reserves should be made for pavement, footpaths / footways and sidewalks, besides envisaged "real" roadways that are accessible to all and that may preferably not be systematically occupied. Taking the aspect of scale into consideration, the pattern of shifting cultivation alongside rivers de facto is not significantly different from most ribbon developments which are well known for other areas in Suriname. A comparative analysis would be advisable in support of SLUP-approaches and practice. There is an interesting and innovative but also urgent SLUP-task ahead here, both for RGB and OW in close cooperation with RO, for the whole of the Interior.

From a landscape ecological perspective, the Paramacca tribal area could serve as a representative sample for the interior as a whole. The figure below portrays the extent of shifting cultivation areas in 1995.⁶⁰ Most plots are located on river terraces. In case terraces were absent, lower gently sloping sections of valleys were utilized. Slash and burning practice causes a higher risk of nutrients being washed out. After

⁵⁹Living Guianas Report, The State of the Environment, 2012

⁶⁰Gisplan, Streekontwikkelingsplan voor het Paramakaans stamgebied aan de Marowijne, 1995.

a few years, the quantity of biomass production on plots rapidly reduces, after which the plot is left for another one. On the previous plot, secondary vegetation starts growing. This type of land degradation is common for traditional agriculture in the Interior. Increasingly, people of the Interior are aware of the negative environmental effects of shifting cultivation. Supported by mechanized inputs like small tractors, attempts are made to practice sedentary farming now.

This form of subsistence agriculture with a small market orientation results in land degradation; it is a concern, but is far less emphasized as a real problem in the shadow of the possible negative impact of gold mining. Analysis also reveals that new clearances concern basically small, scattered areas. It seems that subsistence farming is perhaps (far) less important than before. Local economies have been clearly diversified and income from gold mining and tourism has increased substantial. Besides, traffic possibilities are much better for many. Subsistence farming seems to be more closely related to the lower socio-economic strata of local societies than before, when it was the most significant activity to survive.

Gradually, relatively large tracts of land were cleared successively. Not all land was cleared through times specifically for shifting cultivation purposes (see figure 10). Wood was a relevant income provider too, which resulted in more clearances: first through selective logging and in a next stage for shifting cultivation. The total area which has been cleared so far however is a small fraction of the tropical rainforest area, but shouldn't be ignored since land has been degraded. It basically concerns areas that were rather well accessible in the past. The total size of degraded land is highly associated with the total population alongside rivers and population densities. As compared to the accessible areas only, the surface affected by land degradation caused by shifting cultivation combined with wood logging is large and is of concern.



Figure 13 Land surface affected by shifting cultivation (whitish area) with secondary vegetation in Boven-Suriname (orientation from south to north; Brokopondo lake on background)

3.6 Possible, macro level Sound Land Use Planning approach for the Interior

The Interior is highly undulated and almost entirely dissected by rivers and numerous creeks. This "water land" gives particular opportunities to SLUP which will take a quite different shape than in the Coastal Plane, particularly regarding the scale of operations. According to Arlinghaus⁶¹ and others, it is recognized that the preservation of natural features depends upon the preservation of topography, and if the fundamental topographic unit is the watershed, then the preservation of natural features depends upon the watershed. If one accepts this principle, then it may well be a small step to the following. When environmental concerns are involved, the drainage basin should be the fundamental planning unit⁶². So, the partition of wetlands and other elements of the drainage network, by man-made planning unit boundaries, is not possible.⁶³ Emphasizing passive land use, the MiniMax-principle could be applied to preserve natural landscapes in the Interior and to preserve nature. Quoting Arlinghaus again: "an optimal plan is one which minimizes alteration of existing entities and maximizes the common good. Highly general principles, such as this one, demand attention to definitional matters: what is meant by "common good" or how might one measure "alteration." These are difficult problems: one advantage to an abstract view is to bring important and difficult issues into focus. The basic idea behind the Watershed Principle might be captured as one that minimizes damage to the environment and maximizes satisfaction of human needs and desires. Viewed more broadly, the Watershed Principle might be recast as a MiniMax Principle which can then be recast downstream abstractly, in a number of other more specific forms"⁶⁴. For Suriname, a country with abundant wetlands, marshes, rivers and other continuously inundated depressions, the above mentioned conceptual approach related to delineation of planning units and management thereof, suggests that District and Resort boundaries can best coincide with the edges of drainage basins. For the Interior this is a decision which can still be made without major consequences. This will avoid governance clashes of interest. Such an approach will easily allow different development management visions of neighbouring planning units without exercising a mutually negative impact upon each other. In the past, boundaries of districts already followed this principle. An alternative road is to establish Water Boards based on this principle.

⁶¹Arlinghaus, S. *Spatial Mathematics: Theory and Practice through Mapping*, 2005

⁶²Leopold, L.B., Wolman, G. and Miller, J.P. *Fluvial Processes in Geomorphology*, 1964-reprint 1995.

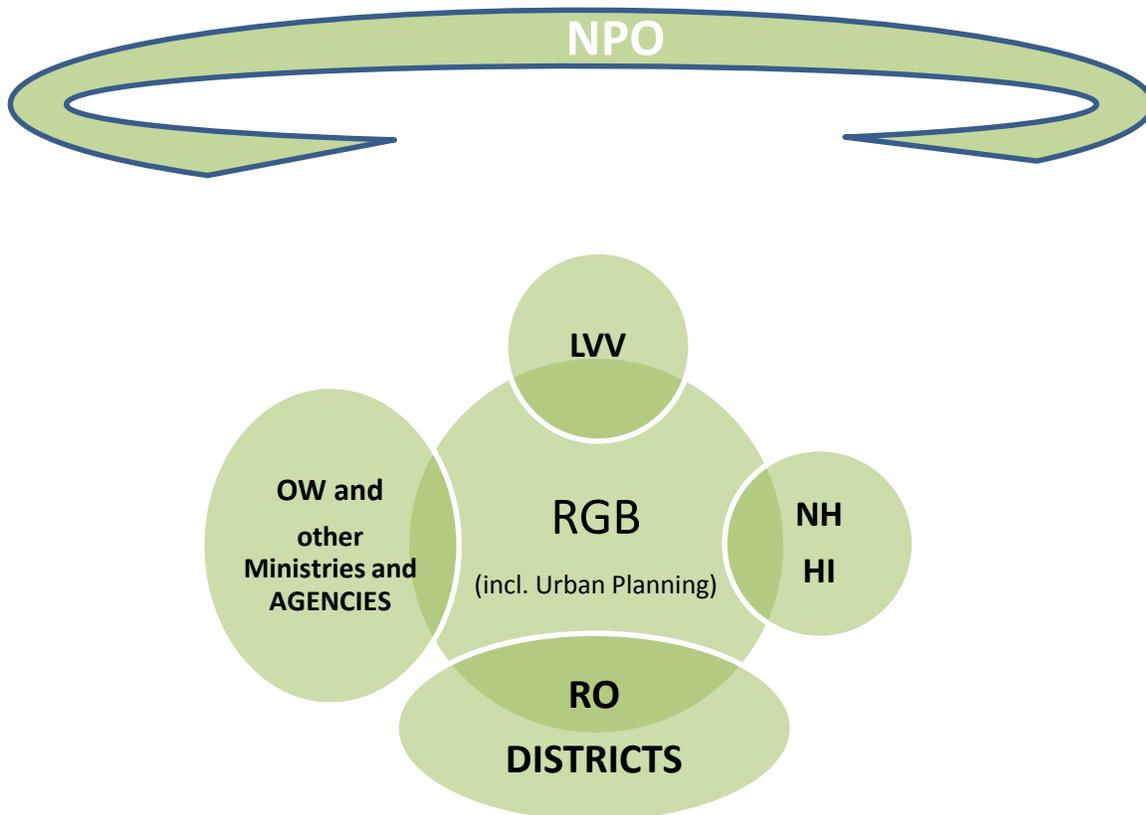
⁶³Arlinghaus, S. *Spatial Mathematics: Theory and Practice through Mapping*, 2005.

⁶⁴Arlinghaus, S. *Elements of Spatial Planning*, in: *Planning Theory*, 2012.

4 Institutional, Organizational and (Sound) Land Use Planning Framework of RGB

4.1 Institutional and Organizational Framework

The institutional setting for land use planning in Suriname is challenging but also rather cumbersome. Different ministries and government agencies have responsibilities for land use planning in Suriname. There are ministries and agencies with overlapping competencies, while the coordination between these agencies is insufficient. Analysis reveals that the implementation of the existing legislation is also poor. The obstacle of overlapping competencies of ministries finds its origin in the antiquated but still effective laws in combination with new insights of Government to institutionalize spatial planning. In the past, political factors have played a role in shifting divisions from one Ministry to another. Consequently, the current placement of departments within Ministries is not based strictly on functional criteria, which renders their capability to perform specific functions suboptimal.⁶⁵ With the confirmation of the Ministry of RGB in 2005, an initial step was taken to coordinate land use planning in Suriname. However, the necessary legal and technical measures have failed to materialize. A general reconfiguration of the existing Ministries, leading to the consolidation of spatial/physical, regional and urban planning functions in one Ministry, would be beneficial, however it is not foreseeable at the moment whether it is political and practical feasible.



⁶⁵ C. Toppin-Allahar & H. Schurman, Intermediate Report, Integrated Coastal Zone Management Plan, Component II, 2009, p.5.

Figure 14 Preferred Institutional Structure to optimally facilitate SLUP

For a good understanding of the contents of the Support Structure to be created for Sound Land Use Planning, a proper overview is necessary of divisions of RGB as a whole and of the sub-Directorate Spatial Planning.

In order to foster institutional strengthening of RGB it is necessary to upgrade the organizational structure of RGB. Therefore, gradual renewal of the organization structure of the under-Directorate at stake must take place as part of the Roadmap to be designed to introduce and embed SLUP gradually.

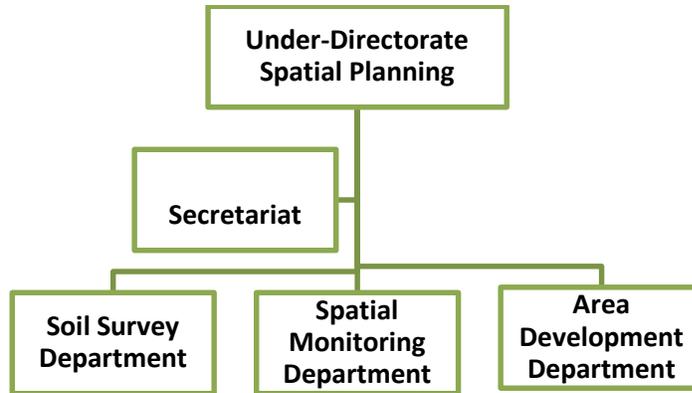


Figure 15 Actual Organization structure sub-Directorate Spatial Planning

This organization structure needs a revision, which will involve a drastic and innovative renewal and adaptation to contemporary standards. This renewal has been proposed already⁶⁶ and may look as follows. Based upon contemporary approaches to spatial planning a number of implementation tasks are proposed for the new set-up of the under-Directorate. An organization structure portrays actual tasks at / of an organization. From these tasks the institutional structure can ideally be largely derived at. Therefore, the next illustrations are shown here.

⁶⁶GeoVisions, Lutchman, H.T.J.- i.c.w. Kadirbaks, S., 2013 (3 reports): Functionele context, doel- en taakstellingen; Opzet en Organisatiestructuur; Functies en Functiebeschrijvingen Nieuw Personeel; sub-Dept. of Spatial Planning, Ministry of RGB, Suriname (2013)

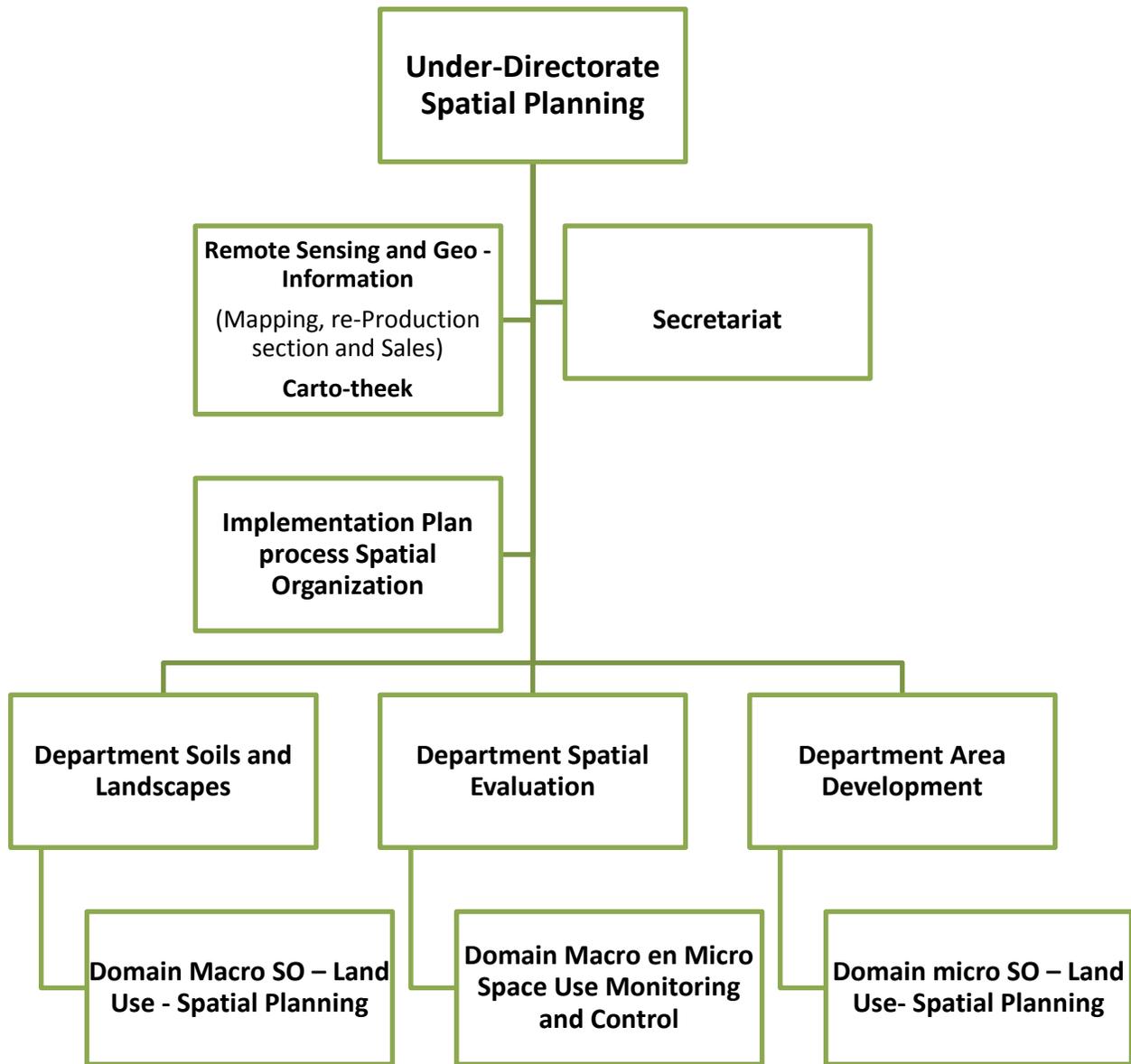


Figure 16 Proposed organization structure of the sub-Directorate of Spatial Planning

The proposed⁶⁷ organization structure above adheres to contemporary tasks of a (under)-Directorate of Spatial Planning. It should be emphasized that only partly a consultant's input has been provided. The director and staff contributed substantially to the above new organization structure, even prior to the consultant's assignment.

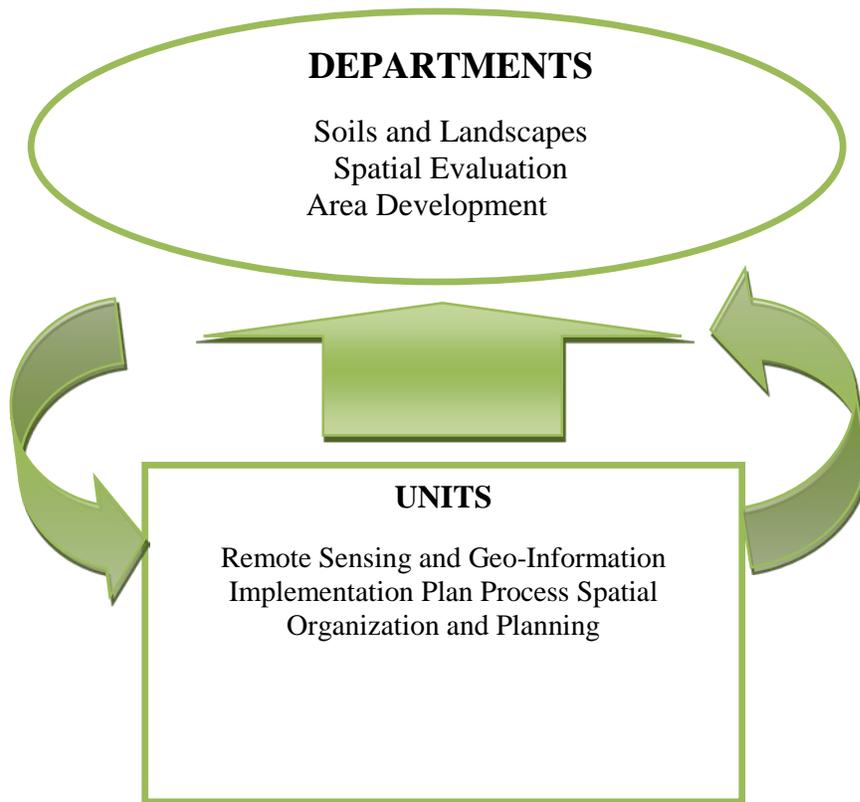


Figure 17 Intra- organizational structure of the sub-Directorate Spatial Planning

The functional⁶⁸ main components (Departments) consist of continuously inter-acting Units that mutually support each other. They are geared towards continuous implementation of substantive aspects of spatial organization, control thereof and on planned organization of Departments that focus upon wider areas or regions of the entire territory. In order to maximize substantive success and optimize procedures, a pragmatic approach has to be followed. Summarized in graphical format, our tentatively proposed strategic route looks as follows.

⁶⁷GeoVisionS, Lutchman, H.T.J.- i.c.w. Kadirbaks, S., (3 reports): Functionele context, doel- en taakstellingen; Opzet en Organisatiestructuur; Functies en Functiebeschrijvingen Nieuw Personeel; sub-Dept. of Spatial Planning, Ministry of RGB, 2013

⁶⁸GeoVisionS, Lutchman, H.T.J.- i.c.w. Kadirbaks, S., 2013 (3 reports): Functionele context, doel- en taakstellingen; Opzet en Organisatiestructuur; Functies en Functiebeschrijvingen Nieuw Personeel; sub-Dept. of Spatial Planning, Ministry of RGB, 2013

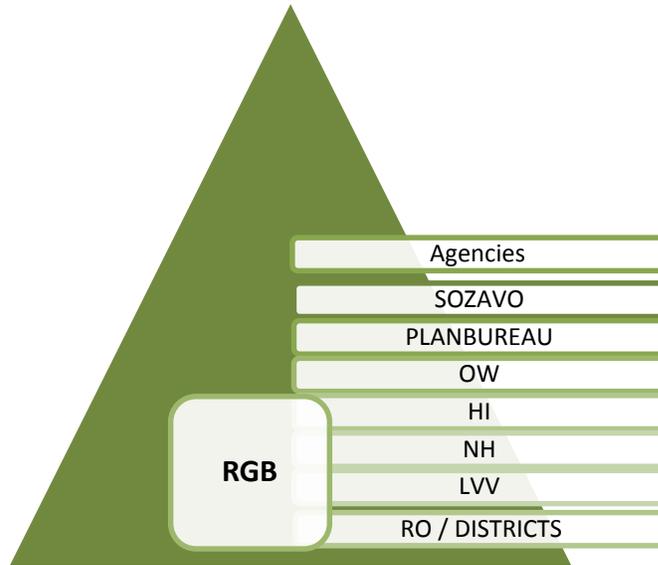


Figure 18 Institutional Structure Ministry of RGB from a land allocation and land use "planning" point of view⁶⁹

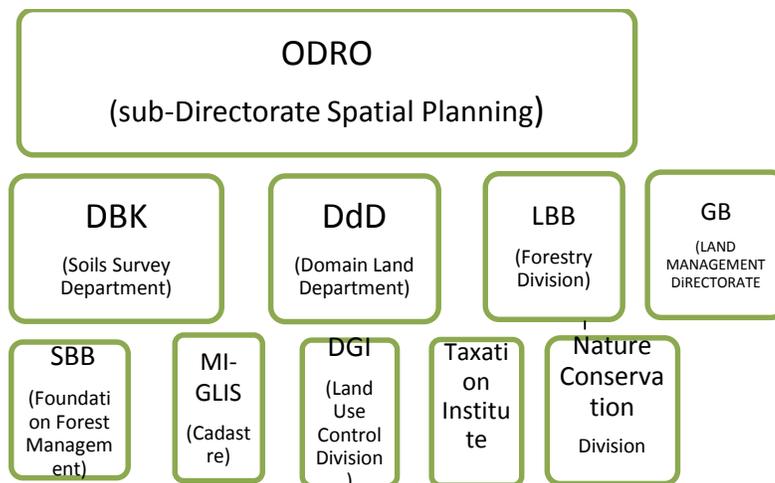


Figure 19 Inter-organizational interaction structure, RGB

It could be concluded that both RGB's institutional structure and ODRO'S (internal) organizational structure give ample evidence, based upon the task setting of RGB, that a firm foundation for an institutionalized support structure for sound land use planning in Suriname can be established at RGB. The ministry of RGB, including all departments and divisions / sections, obviously emit a focus on land, land rights and land use.

RGB is, according to its actual task setting (which requires enhanced and firm legal embedding), intrinsically concerned with land allocations, zoning and land use planning in Suriname: with regard to land allocations in both rural, sub-urban and urban areas; with regard to zoning and land use planning in

⁶⁹highest position at right hand side indicates structurally least intensive relations regarding land and land use issues.

both rural and sub-urban areas, with an eventually strong (decisive) impact on envisioned urban extensions. Both LVV and RO have a number of implementation tasks in rural, including agricultural, areas. RO has a strong focus upon the Interior, though apparently not exclusively. LVV focuses primarily on the Coastal Plain, but with an increasingly important task to prevent land degradation through monitoring the quality of aquatic environments (Fisheries Department).

RGB is directly concerned with land allocations in rural areas, covering almost the entire territory of Suriname. All other ministries and agencies that are involved, in one way or another, with basic and ad-hoc land use planning, are primarily dependent upon RGB's evaluative concerns and decision-making tasks concerning the use of tracts (parcels) of land. However, RGB did not always play a sustainable role with concern to land allocations as such and intended land use alterations, particularly not geared towards land to be finally allotted, either by private sector mechanisms or by the ministry of OW for basically Public Housing. Too many tracts of valuable land for agricultural purposes or environmentally vulnerable land which should have been left idle for passive land use, have been allocated for other active land uses. Unfortunately, this land use allocation practice has been a common feature for decades already under the then ministries of Development ("Opbouw") and Ministry of Natural Resources and Energy.

Graphically, the operational institutional structure with high dependency relations between RGB and other ministries, can be visualized as follows.

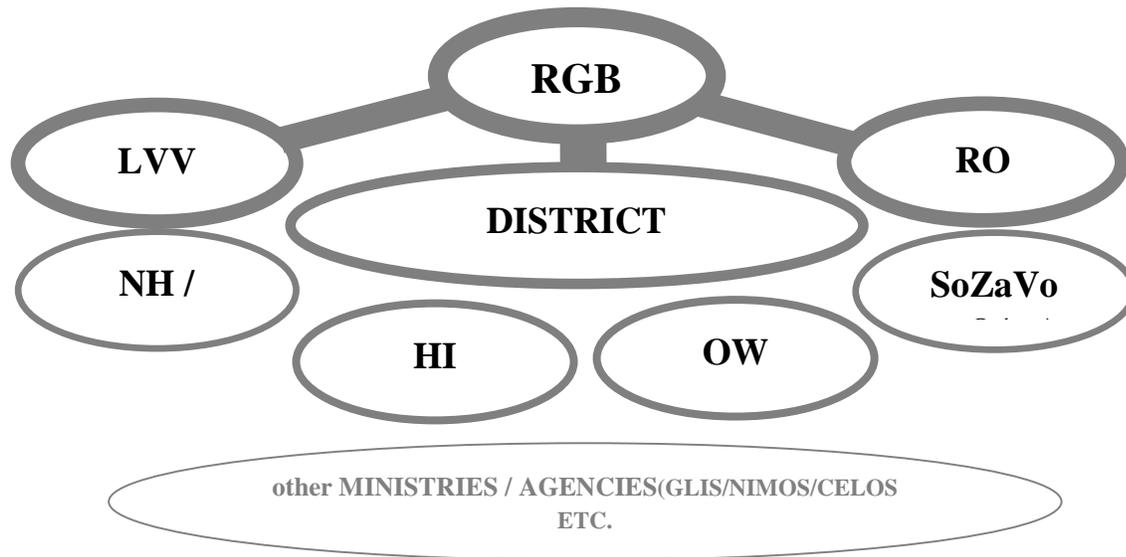


Figure 20 RGB's basic Operational Institutional Structure to be strengthened in support of Sound Land Use Planning

The degree of space consumption of active land uses of other GOS and the intensity of interactions with RGB during preparatory phases and land use alterations, is attempted to be illustrated with the line width.

Core ministries are the ministries with a clear spatial orientation with a large impact on space; understandably, it is anticipated that the above core of RGB's Institutional Structure, for key decision-

making, which is partially based upon existing mutual inter-dependency relations, will greatly enhance effectiveness of LUP-processes.

Both ministries of LVV and RO do have certain infrastructure related implementation tasks in rural areas. At the same time, both LVV and RO are dependent of RGB with regard to land allocations and land use planning. The aforementioned infrastructure tasks will assist RGB with their land use planning activities in rural areas.

It is to be emphasized that land use and spatial plans suppose continuous close interactions with the NPO. The NPO has an umbrella function which results from their national development planning tasks. Plans should match national development planning objectives.

4.2 Organizational requirements and procedures to facilitate SLUP implementation

From conversations with key-Government Officers, District Officers and a glance at the distribution of land allocations for some districts, the conclusion is that land is scarce to systematically plan uses.. Most probably even very scarce, as could be deduced from quick observations. Particularly relatively large tracts consisting of contiguous parcels of land can hardly be supplied. From the land allocation pattern as compared to the natural spatial structure It could be deduced that in the Young Coastal Plain, where most land which is easily accessible, where investments are relatively low and soils are fertile, has almost all been allocated already. The price to obtain the information from MI-GLIS appeared to be a bottleneck however. For land use planning, particularly to acquire a first macro view of what can be eventually done and where, such information is indispensable.

In order to adapt to this spatial reality and to specific modalities of active SLUP which have proven to be useful (and were developed) in other countries where similar situations occurred and already had to be tackled instead of waiting for ideal situations to emerge, a dedicated capacity building program should be implemented. Again, particularly at district offices the need has been expressed to find appropriate solutions for stagnating economic development on (their) local level which is caused by a far too limited overview of possibilities to identify land to be supplied by RGB and of land which is already legally owned but left unused.

Because of the relatively small size of their area of concern, district authorities are almost on a daily basis confronted with limited development possibilities resulting from land scarcity and non use. Moreover, the proportion between freehold land and land rent, is, quite unfavourable: most land seems to be rental land, which limits land use possibilities. But even if freehold land was abundantly available and spatially favourably distributed as well, a number of other economic development problems would arise for government agencies.

At the same time, regardless the nature of the spatial distribution of land rights, awareness exists and grows that at least something needs to be done urgently in terms of sound land use planning in Suriname. By district authorities, their needs are frequently expressed more firm. As a result, in close cooperation with District Authorities and relevant agencies, a participatory planning approach needs to be adopted through joint and intensive capacity building activities with key ministries. This will quickly enhance understanding the spatial structure involved and ongoing spatial processes therein and the probability to adopt the most

appropriate land use planning option(s) from a pragmatic point of view, eventually with a strong regional differentiation in a substantive sense.

It is anticipated that such will gradually emerge autonomously in planning practice. It is further anticipated that for each region (and perhaps district) may, as a result of the existing regional variation and internal differentiation, decision-makers will finally adopt an appropriate "best fit" solution, in terms of (space) land use as well as stakeholder satisfaction. However, a condition to be fulfilled is that each regional "best fit" sound land use (action) planning solution will be covered by and should perfectly match with the national level Ecological Main Structure (EMS) of which at least contours are conscientiously, jointly, thought of and tentatively visualized. The findings above related to appropriate approaches to *active* land use planning.

For *passive* land use planning (environmental protection and prevention of land degradation), a meaningful component of the envisaged SLUP to be introduced. *In conclusion*: a more or less conventional, conceptual, approach to sound land use planning in Suriname seems not to be possible *to its full extent*. Adaptation to envisaged or identified possibilities, using the institutional strength of the Ministry of RGB which contains a number of indispensable opportunities, seems to be most feasible.

Besides procedural steps that have to be described and implemented to facilitate sound land use planning, a first requirement is a *strategic* (spatial planning) approach. Land use planning will be a new regular process-based activity and everything that is new (innovations) faces resistance by definition. Particularly once firmly embedded stakes may be eroded, which will be the case if land use planning is to be sound.

As a result, another procedure pops-up: a procedure which stems from a more recent and better articulated approach. This approach emphasizes the latest understanding of successful and sustainable spatial planning. There is growing evidence that the problems, challenges and opportunities that Suriname faces cannot be tackled adequately by traditional spatial planning. One of the key challenges for planning in this respect is to analyse critically what type of planning is suited as an approach to deal – in an innovative and transformative way – with the problems and challenges of spatial-economic development of Suriname. Both (traditional) land use planning and zoning are rather outdated "tools" but are obviously still of high value for Suriname because these spatial planning phases have not been practiced as yet. Strategic spatial planning needs to be considered timely. Strategic spatial planning needs a firm contextual understanding of decision-making echelons and material interests, of (leading) discourses and of the constraints of a more-of-the-same attitude.

Actually, to start with, a participatory approach is certainly required in Suriname, though a new conceptual approach, emphasizing co-production⁷⁰ (which goes a step further than participation). This may yield even better results within the new context of *strategic spatial planning* of which (traditional) land use planning, structure planning and zoning are components, whereas the rigid, radically top-down-decisive and (urban) design oriented "master planning" fortunately has been abandoned as a viable approach to land use planning since the end of the sixties already.

⁷⁰Albrechts, L., Reframing strategic spatial planning by using a coproduction perspective, in: Planning Theory, 2012.

A frame, in the sense of spaces of deliberative opportunities ⁷¹, influences the way actors, in a co-productive process, select issues; the way they define problems, challenges, opportunities, practices; interact with the dynamics and tensions of a place and a situation; and shape actions (plans, policies, projects) as a result. As strategic planning approach aims to understand society as a continual reinvention of the socio-spatial structure and its mode of narrative and communication, one cannot confront complex dynamic realities (neighbourhoods, cities, city-regions) with a language designed for a simple, static top-down approach. Hence the need for ways of thinking and for tools, concepts and instruments that help governments, citizens and planners to cope better with challenges in an unequal, dynamic and complex environment⁷². The figure below provides a first attempt to a strategic approach and related procedures to launch and subsequently facilitate regular land use planning practice.

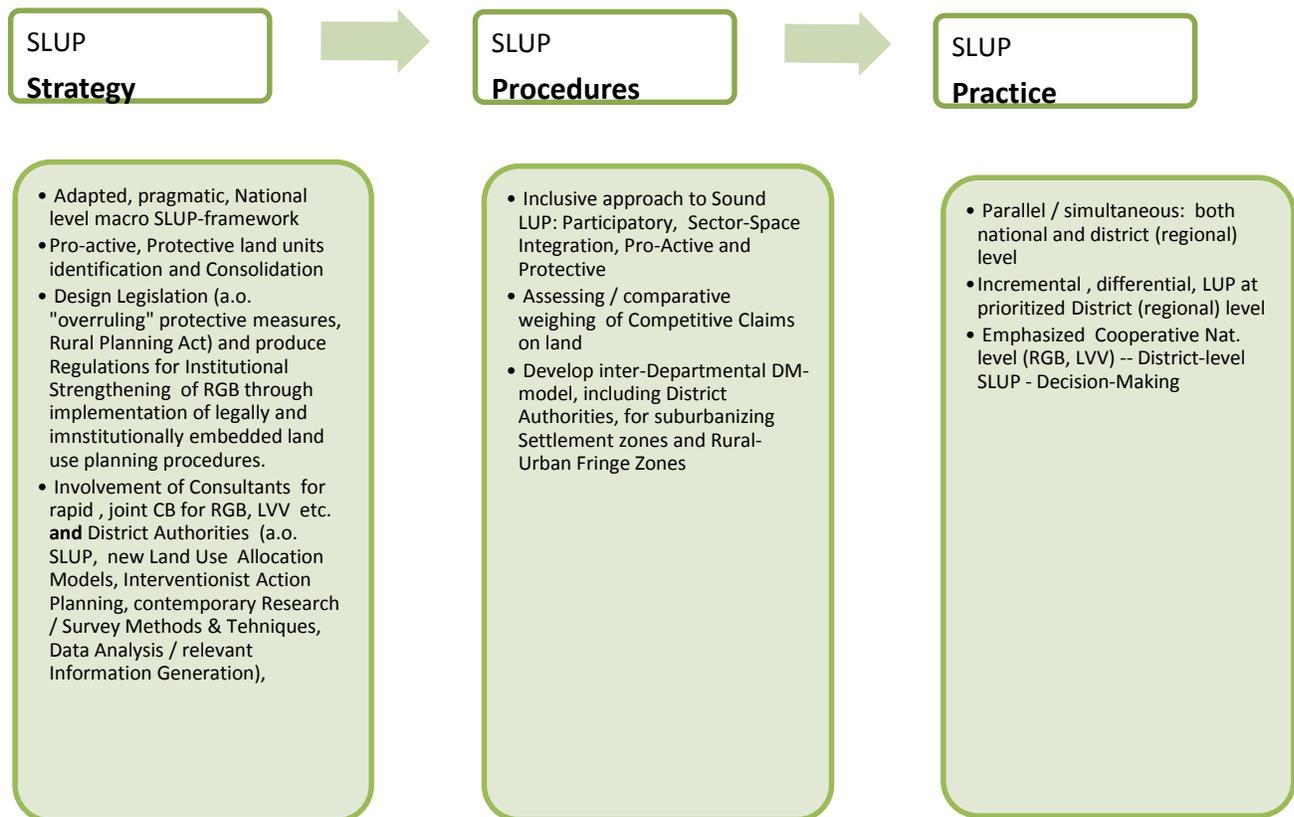


Figure 21 A strategy to facilitate regular land use planning practice.

As can be deduced, there is a group of public stakeholders that are involved with *rural* Suriname. Several of them have implementation tasks. These will support RGB's spatial planning activities in practice, of

⁷¹ Needham, B (2000) Making strategic spatial plans: A situational methodology! In: Salet, W and Faludi, A (eds) Revival of Strategic Planning. Amsterdam: Royal Netherlands Academy of Arts and Sciences, pp.79–90. Ogilvy J (2002).

⁷² Winch G (1998) Dynamic visioning for dynamic environments. The Journal of the Operational Research Society 50 (4): 354–361).

which sound land use planning is a major activity. As a result, the institutional structure which will inherently emerge, will be robust and can be considered a strong supporting structure for RGB's cooperative land use planning activities.

4.3 Strengthening the SLUP-support structure

4.3.1 Composing a District Typology

District Councils and Resort Councils, representing district populations, should play a far more pronounced role in SLUP than was anticipated before this assignment. This statement yields underpinning through clear evidence which has been provided by district authorities themselves during interviews. This new phenomenon obliges to make a preliminary distinction between types of districts within planning perspective to shed light on differential approaches to our broad sound land use planning objective to be achieved in due time. It is during the interviews that the conviction emerged that District Councils should play a significant role in a. o. local stakeholder participation, environmental protection and input of their proven and indispensable local knowledge, while matching local level SLUP objectives to be embedded in regional and national strivings, spatial decentralization and so on. One single strategy to effectuate this essentially new role which is foreseen for District Authorities in macro-level SLUP may not work. Districts have proved (from the questionnaires) to have sometimes entirely different spatial-economic development perspectives and widely diverging problems to tackle. It is concluded that their specific situation is a factor that largely amounts to this phenomenon. In order to structure and streamline their individual input in a national level SLUP, a typology of districts could better emphasize and articulate their specific development priorities and differentially incorporate specific options for solutions to their specific problems within land use plans. Districts can, tentatively, be typified as follows. It is believed that this typology may have a considerable impact on their envisaged role within SLUP practice and Vision-perspective.

A first approximation to a (*tentative, broad and to be refined*) typology-base aimed at SLUP, may look as follows:

- Northern Coastline districts, with integrated inter-regional cross-border land use planning functions (Commewijne, Saramacca, Coronie)
- Northern Coastline districts with integrated inter-regional cross-border functions and inter-national cross-border land use planning functions (Nickerie, Marowijne)
- Northern Coastline districts, with integrated rural-urban (rural-urban fringe, sub-urban) land use planning functions and urban development regulation functions from a protective agricultural land use zoning perspective (Commewijne, Wanica, Para)
- Northern Coastline districts with specific inundation and water management problem-related land use planning functions (Paramaribo-Noord, Wanica, Commewijne, Coronie, Nickerie).
- Northern Coastline districts, with potentially pronounced but varying, relatively large and small scale coastal environmental protection functions (all coastline districts)
- Centrally located districts (Para and Brokopondo) with a potential regional spill-function with possible socio-spatial and spatial-economic central place functions to Coastline districts as well as Southern districts and Resorts.

- Southern districts with a strong focus upon industrial and mining development possibilities and limitations as well as of large scale environmental protection of the Interior.

Districten, Economie en Milieu *Districts, Economy and Environment*



Figure 22 Districts of Suriname--significant politico-administrative entities for sound land use planning.

(Source: H.T.J. Lutchman, *Geo-database Suriname*, Stichting L+L)

From questionnaires and particularly extended exchanges of ideas with district staff, it could be deduced that districts have intensive relations with a number of actors in terms of basic thoughts about land use planning. Though relations with the ministry of Public Works are often highly intensive, their infrastructure nature should not be confused with land use planning since infrastructure maintenance works constitute the large burden of activities. It was admitted that districts would prefer a coordination task concerning land use planning on local level after consultation and in a sustainable relation with the ministry of RGB.

District Authorities increasingly develop their own development vision for their district. This is not surprising since:

- there are no development guidelines for districts because a national level spatial development plan is absent. A holistic, inclusive spatial development view is unfortunately absent.
- District plans appear to be basically listings of (rather) new small scale land use requirements and of management tasks of different sectors (partly ministries and the district team itself) of land use types, basically of an infrastructural nature.
- the wide variety of particularly sector-based activities that are mentioned in District Plans is a de facto proof of district authorities' sound understanding of their own district: physical and socio-spatially (with a limited spatial scope however), socio-economically and socially.

It is of prime importance for RGB to understand this role of District Authorities, with a significant task for District Councils to make the envisaged participative approach operational. This approach needs *prominent inclusion* in the newly to be created institutional structure of RGB within the context of SLUP procedures. Given all evidence (resulting from questionnaire analysis) of the potential significance of District Authorities in cooperation with RGB (and particularly LVV) with concern to SLUP, it is to be advised that

the provided tentative typology of districts needs to be worked out urgently into further detail for rational underpinning of a prioritization strategy for the envisaged incremental sound land use planning approach.

4.3.2 Composing a Regional Typology

Likewise, in support of national level spatial planning and for compilation of a realistic and up-to-date National Development Plan, a Regional Typology⁷³ deserves ample consideration. It is to be understood that regular updates will amplify their respective *multipurpose* use value. Regional typologies use a regionalization of the entire territory as a foundation. A regionalization results in demarcated regions, often cross-cutting district boundaries, which next serve the purpose of pinpointing at (potential) developments, reasons for stagnation etc., based upon recent relevant data. Both district and regional typologies enhance multi-dimensional understanding of the entities involved. Consequently, SLUP approaches can be better articulated and success rates increased.

4.4 Sound Land Use Planning Practice

4.4.1 Introduction

Though mentioned already, for urban areas, particularly the Greater Paramaribo region, SLUP will predominantly amount to small scale pockets and linear urban redevelopment. Referring to the enormous unsolved drainage problems to increase urban welfare and productivity, urban management will be basically at stake. It is to be anticipated that both Rural-Urban Fringe Zones and sub-urbanizing small settlements, require a combined approach spelled out by both RGB and OW until new legislation is developed and tasks are changed accordingly within a new contemporary decision-making and SLUP-context. Given the actual task setting, Sound Land Use Planning in Suriname will predominantly, but not exclusively, focus on rural areas, to be led by RGB. Suriname consists of at least of 95% of rural land. As a consequence, SLUP will basically employ rural land use planning approaches, both passive and active, of which agricultural land use planning and (comprehensive) rural settlement planning will be the spill of spatial-economic development and environmental protection. For Suriname this will be a rather new land use planning experience which will provoke a mental shift from almost purely urban, largely consumptive and pseudo-metropolitan thinking, to pronounced rural productive thinking focused upon drastically reducing the existing regional imbalance between de facto the central northern region, basically consisting of the capital region, and the greater majority of the remaining territory

⁷³Gisplan-Geosys, Regional Information System for the National Planning Office, (EDF-project), 1993.

4.4.2 Actual Sound Land Use Planning Practice

Actually, Sound Land Use Planning in Suriname basically pertains to passive land use planning. For active land use planning a few structure plans were composed by consultants for the capital city⁷⁴. The ministry of OW did not give a follow-up to these plans however. On larger scale level and pertaining to rural space, the main actors within this sphere are the ministry of RGB / Nature Management and SBB from their particular perspective, as well as the ministries of Agriculture (LVV) and Regional Development (RO). Naturally, a number of other Agencies and NGO's are partially involved as well, whereas the NPO fulfills a national level sustainable development oriented guide function.



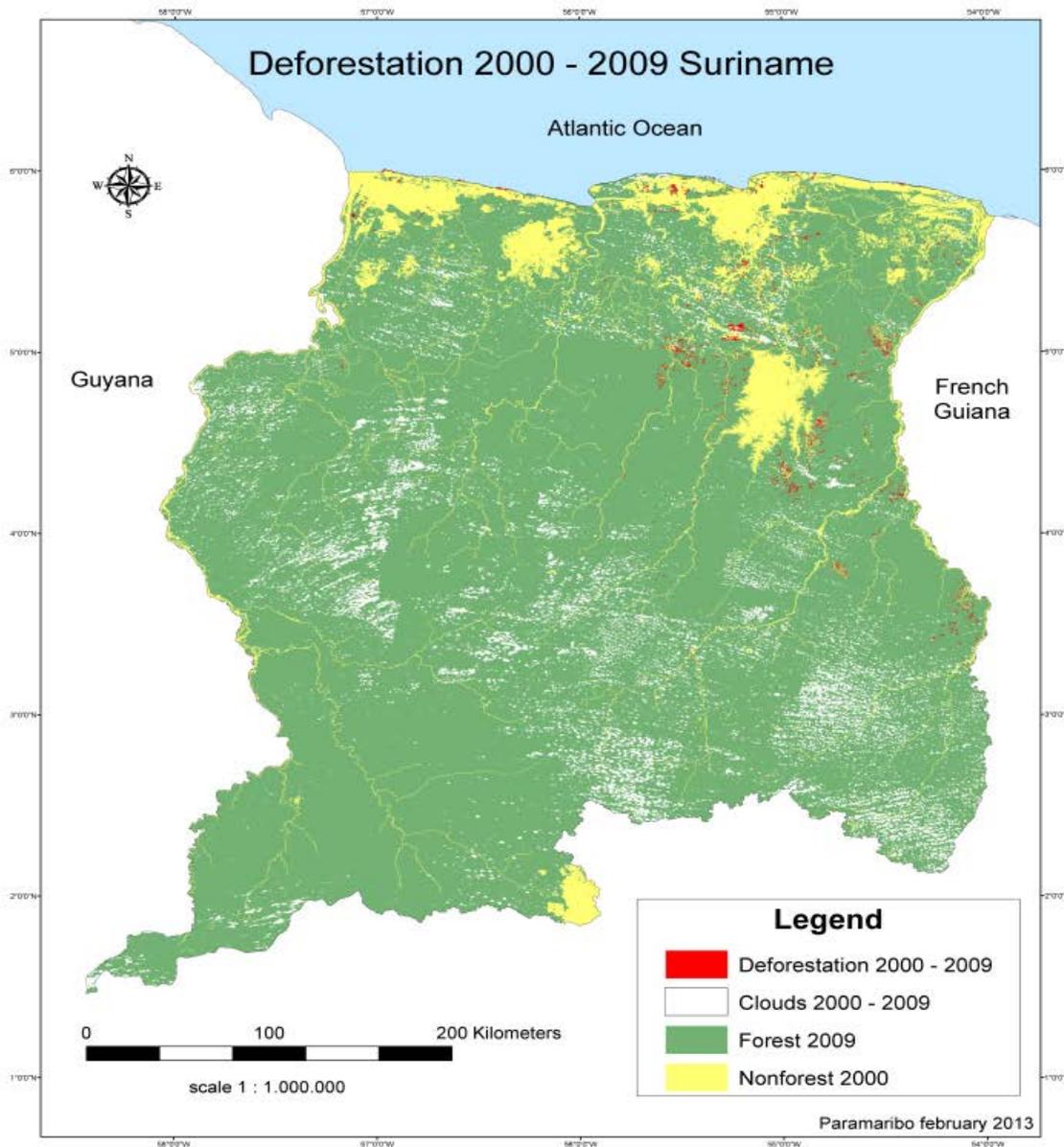


Figure 24 Deforestation Suriname, 2000-2009

(Source:SBB).

Both rural land use planning and rural settlement planning require a mind shift. In as far land use planning or spatial planning was deliberately thought of, an obvious urban orientation prevailed. This is not surprising: the seat of government is in the urbanized area, rural development was hardly systematically

focused upon and most (planning and management) problems occurred in the urbanized area of the entire territory. Now that climate change has proven to be an increasing threat to that area in two ways (sea level rise and increase of precipitation on urbanized low lands), a southward view⁷⁵ is crucial to sustain. Unnecessary and expensive water management of northern residential areas at the cost of a wide range of services elsewhere can thus be avoided.

As of so far, a systematic focus on SLUP for active land uses is hardly practiced in Suriname. As compared to passive land uses, i.e. designation of (partly) protected areas, much more is done. A structural approach to Sound Land Use Planning for active uses on *macro level*, is still.

Fortunately, there are interesting themes in common that stem from the results of the questionnaire to make a serious attempt to start with SLUP in Suriname, both on national decision-making echelons as well as on district level implying resort level participation while combining government and private interests. For this assumption, empirical evidence has been amply found on district level. All ministries and all district commissioners and staff clearly expressed the need for SLUP. Moreover, all these stakeholders clearly emphasized their concern with land degradation issues, environmental protection and biodiversity preservation.

Finally, both SBB research outcomes and the valuable outcomes of the Integrated Coastal Zone Management Project, both of which with a significant spatial structural impact on macro level mostly for passive but also active land use planning activities, need incorporation in a gradually emerging *macro* land use planning framework. The SLUP-activities may (indirectly) substantially benefit from SBB and ICZM-project outcomes. Likewise and in the near future, the cooperative RGB-LVV-IDCS findings are expected to co-structure space to plan for significantly too.

4.4.3 Past Sound Land Use Planning Practice

So far, a few scattered attempts have been made to apply land use planning systematically in Suriname. These range from a number of mostly urban land subdivision schemes (for housing) with a related land use configuration of which certain land uses have a range (sphere of influence, catchment area) outside the allotment proper. Outside the urban sphere far more attempts have been made so far to land use planning, basically in an agricultural or sometimes wider rural land use framework and with forestry uses. The Soils Survey Department and the Ministry of Agriculture were usually joint lead agents. For certain tribal areas a few attempts were also made, ranging from village improvement projects in the Interior to regional development plans with a much wider spatial and sector / thematic range. Unfortunately, these efforts have been largely in vain and did not get any follow-up. Sometimes, facets of plans were picked up (e.g. by the DLGP-program) and attempts made to implement at least something, basically in a non-planning related sphere like e.g. pavement of roads and other infrastructural works. Decades already, SBB made inventories and mapped substantial parts of our territory and contributed to studies which are considered essential components to sound land use planning. It is worthwhile mentioning that land suitability analyses were carried out in the mid-90-ties but never got a follow-up⁷⁶. Examples are given below for the Paramacca tribal area⁷⁷.

⁷⁵Lutchman, H.T.J. , Concept Beleidsnota Ruimtelijke Planning (Internal Note Ministry of RGB), 2007.

⁷⁶Gisplan, Streekontwikkelingsplan voor het Paramacaans stamgebied, Marowijne, 1995.

⁷⁷ Refer to footnote 50.

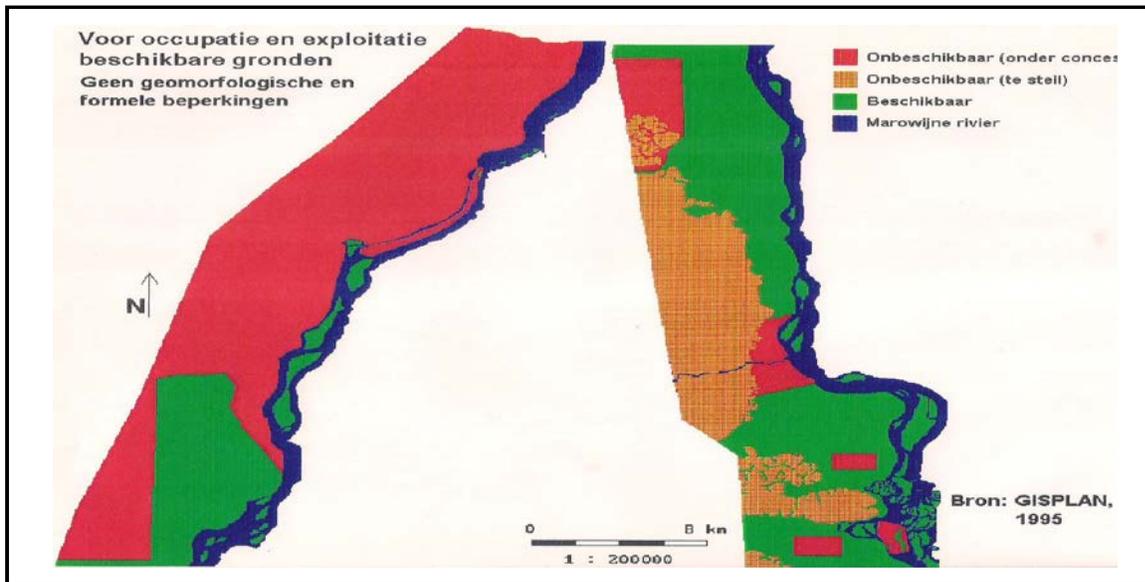


Figure 25, 26, 27 Examples of results of land suitability analysis, Paramacca tribal Area, 1995. Initiating land use planning requires a spatial overview, tentatively revealing what can be eventually done and specifically where. Zoning, unless demarcated according to approved methods rather than based upon intuitive sketches, is a recognized approach to establish a first macro level spatial order to facilitate (more detailed) land use planning.

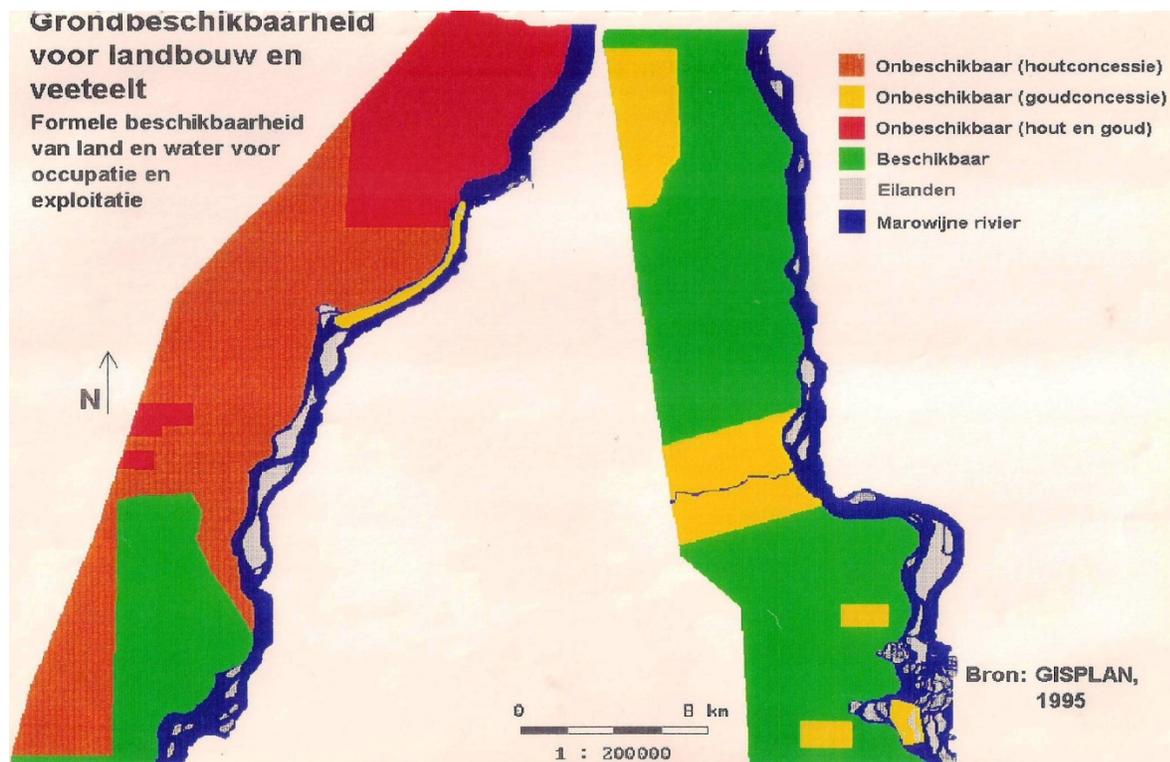


Figure 26 (refer to title fig. 25)

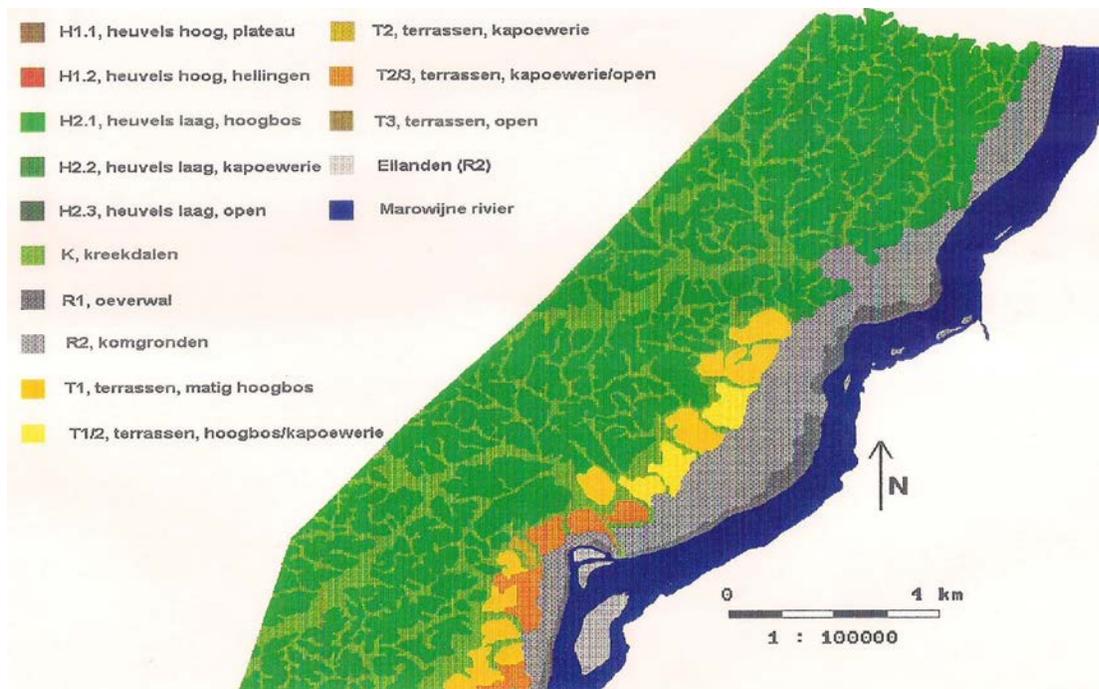


Figure 27(refer to title fig. 25)

Mentioning this project is worthwhile. Results may, on the one hand, serve as base line data for new environmental assessments in the same area. On the other hand, the slow decay rate of relevant parts of most of the information (e.g. soil) and findings (in 1995) make survey results still valid to a large extent, particularly if the rather stagnating developments in that particular area considered.⁷⁸

⁷⁸The Area Development Plan contained a.o. a land use plan, based upon a soils survey, a forest survey, a landscape ecological survey including prevailing land use practice, a land suitability analysis, a (reduced) environmental impact assessment and a (resulting) land evaluation

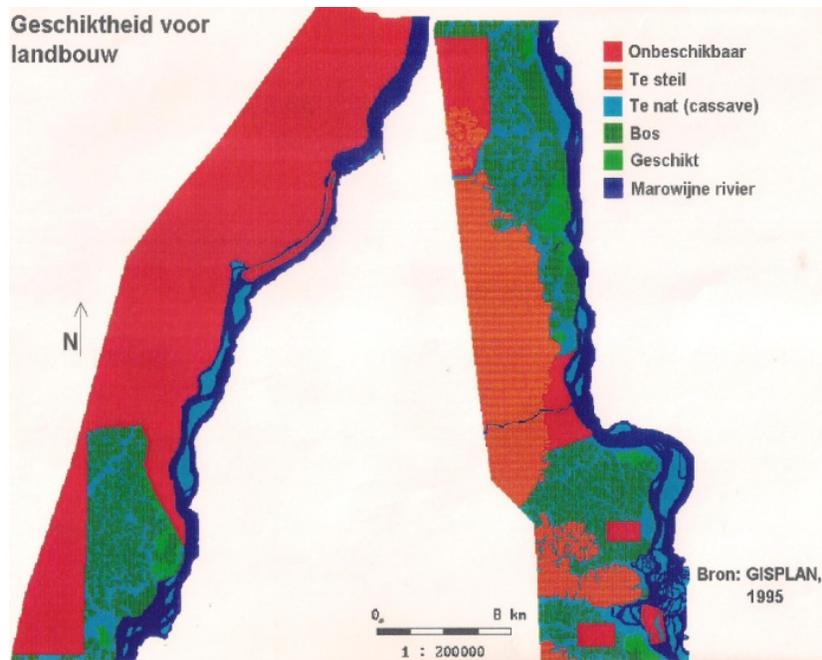


Figure 28 & 29 Examples of approaches to large scale (sound) land use planning made in the past⁷⁹(1995, East Suriname).⁸⁰

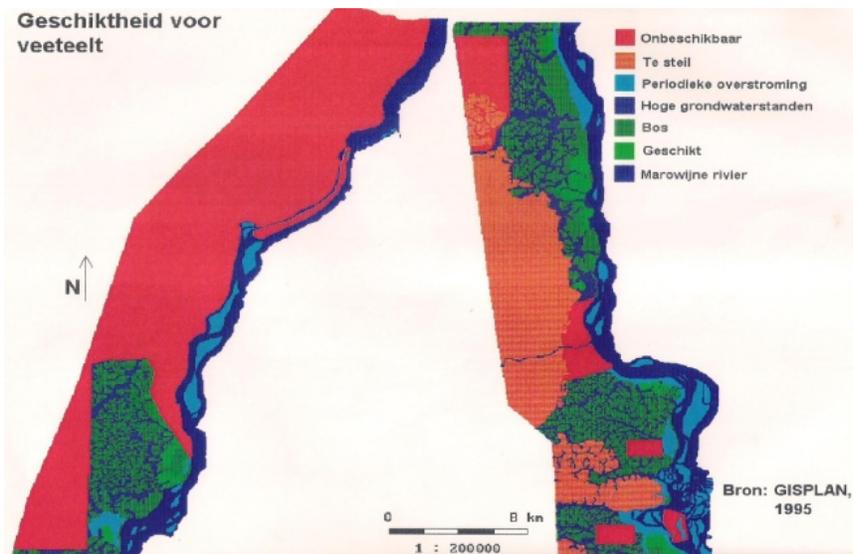


Figure 29 (refer to title fig. 28)

⁷⁹Refer to footnote above.

⁸⁰The Maps show a section of the geomorphologic-soil map, the assessed suitability for farming, suitability for agriculture (arable land) and suitability for settlement locations.

Such research efforts were fortunately not the only ones. Particularly at the Soil Survey Department, sometimes in close cooperation with the ministry of LVV, numerous similar initiatives (land suitability analysis, land evaluations) have been made, though often for relatively small areas. Indeed, for sound land use planning, particularly for rural areas, RGB possesses a relative wealth of valuable information which is still useful.

5 Towards a Shared Vision for Sound Land Use Planning in Suriname

5.1 Introduction

One can't reasonably expect a vision of sound land use planning in particular and spatial planning in general since Suriname had to adapt to a Dutch-imposed sector approach during the nineties. This sector approach was imposed instead of the commonly used "project approach". The sector approach to development planning did not put any emphasis on space and spatial development during the past (at least) 15 years, a period characterized by an almost entire neglect of the NPO, particularly the Division of Spatial Planning therein. In as far as the NPO was considered, a strong bias towards the Division of Economic Planning prevailed, whereas during the "project approach era" the spatial component got its place whenever such was (really) required, though far too often, not in detail. Moreover and above all, Suriname was until then a country without a Ministry of Spatial Planning, Land and Forestry Management (RGB) which, very unfortunate, once it was proclaimed focused entirely upon land allocations and neglected systematic land use planning.

From answers to the questionnaires it appears that the biggest threats for creating a Vision for "sound land use planning" pertain to two main issues. On the one hand, proper understanding of SLUP itself. On the other hand, proper understanding of the actual spatial structure of Suriname, the spatial foundation and resource base for SLUP. However, an exception should be made with concern to District Authorities, where detailed knowledge about their politico-administrative entity has been encountered. Together with the other essential conditions to be fulfilled (e.g. availability of land, environmental protection, consolidation of the high quality of natural landscape components implying natural habitat diversity and quality preservation, the essential participatory approach), these are basic conditions to be fulfilled so as to create a **vision of a preferred spatial structure for SLUP** while opting for a strategic spatial planning process in and for Suriname. Actually, little of these conditions is fulfilled, even not to a reasonably acceptable extent, in general. Besides actions and implementation, a basic purpose of strategic planning is to develop visions/imaginings to frame these actions. The aim of envisioning is to broaden the scope of the possible⁸¹, to provide a frame for decisions in view of a better future, to encourage hopes and dreams, to appeal to values, to challenge existing knowledge, conventional wisdom and practices.

As it appears now, a vision for LUP in Suriname is to be gradually developed by the Government of Suriname with RGB as the coordinating agent as the de facto "Ministry of Lands" and land use allocation *practice*⁸²; in close cooperation with the NPO and ministries most proximate to RGB (LVV, NH and RO/District Authorities, and to a lesser extent OW). Particularly in terms of the potential size of space demands including the multi-purpose use possibilities and related income generation, both closely examined within an environmental impact perspective, RGB with its mandate for passive land use planning is the natural, self-evident lead agent. In our perception of results of the surveys carried out for this assignment, the potentially strong role of Districts is the main finding to create support, respectively a support structure, for sound land use planning. Clear evidence was given also of their environmental concerns, including its spatial dimension which was related to prevention of land degradation. A somehow

⁸¹Zizek, J., About the 'art of the impossible', in: Planning Theory, 1999.

⁸²Also refer to chapter 4. Institutional, Organizational and (Sound) Land Use Planning Framework of RGB

less positive aspect is that District Authorities' spatial horizon does not exceed their administrative boundaries, which requires awareness creation since cross-border considerations are an essential component of (integrated, participatory) spatial planning. Far less than is perhaps thought, populations of districts located further away from the main administrative center (Paramaribo), are basically oriented on their own district and their district authorities. A crucial factor to make participative land use planning operational is, besides political will, involvement and dedication. It is obvious that District Authorities, their district population and local enterprises, are highly involved with their own district, the further their district is located from the Seat of Central Government, *unless* local development opportunities are rather meager.

Through intensified, ongoing interactions with the proximity-Ministries and District Authorities, people's participation and participation of the (local) private sector, will be maximized and optimized. After this process, "facts and figures" will partly gradually and autonomously trickle down to all stakeholders. Parallel to the trickle down process, options for deliberate knowledge transfer and awareness creation can be used to further disseminate the contours of a (conceptual) vision. Meanwhile, through other channels like e.g. presentations at the National Assembly and the Council of Ministers, the upward movement of an acceptable vision (locally and partly already accepted) can be channeled to higher decision-making echelons. The Cabinet of the vice-President, including the National Planning Office, is primarily involved with composing the National Development Plan with an economic, social and spatial dimension. The latter is in fact the spatial precipitation of sector requirements in and on the territory, which has to be mapped (made visual), rather than composing a particular spatial development plan for Suriname. A (national) **Development Plan** is primarily given shape by the several national government objectives geared towards **sector development** strivings, including broad spatial indications resulting from sector development, on national scale. A **Spatial Development Plan** is, as is well known, another type of document in which **space use** is the central tendency, articulating explicitly and even radically *where*, what type of sector development is required and why, in an integrated fashion, while emphasizing environmental concerns.

A Vision as to how the available space of Suriname has to be given shape, preferably in a sound manner, does not float above the ground. Instead, it needs firm embedding on the ground, taking all characteristics, both natural and anthropogenic (the natural-spatial and socio-spatial structure, as well as the actors concerned), into consideration. A space related vision for land use planning and development can't be detached from the actual possibilities and limitations, opportunities and bottlenecks relative to the spatial environment it refers to. On the one hand, contributing at least 90% of our spatial diversity, the particular qualitative aspects of our natural landscapes, their bearing strength to consolidate their associated natural habitats, can't be ignored in a Vision.

This implies that, for the allocation of passive functions or uses to land, opportunities require ample consideration before it's too late. On the other hand, Suriname's social-spatial structure, containing basically active land uses, has a peculiar structure (or: morphology) which is not very favorable to investments and economic development. Therefore, a vision must carefully consider these basic but essential issues of the country's natural and social-spatial environments conscientiously. For more detailed information about the specific spatial variation and differentiation of the natural and spatial environments reference is made to chapter 3. As has been stated in chapter 2.3 considering the identified gaps and challenges ("In order to address the aforementioned gaps and challenges it is important that the Government develops a clear vision of the direction they want to go with land use planning and how they would like to see land use planning

implemented in the country"), Actually, it is within the framework of this assignment and more so given the survey findings, that a tentative, conceptualized vision is given below in order to facilitate RGB with its complex task in cooperation with other stakeholders. Simply stated: the conceptualized vision indicates what could be planned where and why, on macro level and how this could be procedurally accomplished involving all stakeholders in order to give shape to a viable *main (spatial-economic-environmental) structure on national level*. This vision is based upon a combination of approaches to similar work in other countries, the spatial-, economic, -environmental structure of Suriname and of a number of interesting elements of latent visions as expressed during interviews with RGB and District Authorities as well as some elements contained in answers to the questionnaires. Besides, a main result of this assignment is to design a Roadmap in support of sound land use planning. In the perception of the consultants, this Roadmap should necessarily contain at least the contours of a vision of which the underlying structure components should be made clear during input in assignments to follow. These components need to be mentioned already now for inclusion in later Capacity Building assignments to be carried out. These components do also give shape to shifting emphases of and between core Government agencies that constitute the (or: a foreseen) institutional structure in support of sound land use planning, both in a substantive and procedural sense.

5.2 A first approximation

In order to make SLUP operational, a conceptual spatial development structure on national scale is required. Next, and given the particular objectives of the ministries and agencies involved, a systematic, country wide identification of valuable and relatively scarce land (natural landscape) units and their associated wild life has to be visualized, using a labelling system. This process, which is part of several procedural steps to be made, will closely involve District Authorities and relevant organizations, both at country level as well as internationally operating ones, meanwhile making a participatory approach operational.

It may be assumed that approval could be well within reach, since Suriname has provided clear evidence already (with the designation of a number of nature reserves) that wild life protection and preventing land degradation are conscientiously considered. The structure which is created then on national level (in a detailed fashion for the Coastal Plain and broadly for the Interior) could be, finally, after ample public awareness creation activities and in close cooperation with all other stakeholders at all levels, nominated the Ecological Main Structure by Parliament. This Ecological Main Structure⁸³ does not have to be and almost certainly will not be a continuous (unbroken) stretch of protected areas or zone. Successively, at least the contours of the other main structure components need to be designed / identified in space interactively (in participation) and decided upon. This will involve ample research involving large numbers of variables. However, consensus building concerning contours of main structure components of a vision could be accomplished first and at relative pace.

5.2.1 Towards a shared Vision of a national level Spatial Main Structure (SPMS)

In order to make sound land use planning operational foreseen planning activities must fit a broader structure of an envisaged system. Therefore a **vision** is a must: a vision of how Suriname's territory should preferably be organized spatially to be labelled as sound. In fact, it is not the territory as such, but primarily its spatial structure which should be sound, since this structure, after all, determines whether on lower levels

⁸³Also refer to next chapters.

the spatial distribution of particular land uses (active and passive) and clusters thereof improves its population's wellbeing through sustainable economic development. It is believed that such can be achieved once land degradation is avoided through consolidation of as many natural land units as possible, hence wild life is preserved inherently and people live in harmony with nature. As a consequence, clearly delimited tentative zones encompassing **passive land use** (space use) is at stake at first hand to safeguard the significant stake of land use planning to be sound. Naturally, this is normally speaking a long way to go indeed. Therefore priorities have to be set and even more important: a strategic approach has to be adopted in order to create a vision of a viable spatial main structure. At least its preferred contours should be made visible. Initial steps then are to discern the different main components of this preferable spatial main structure of Suriname. RGB's main concern relates to two (2) of the three (3) main components to be created or spatially *designed* if you wish. Conditions to be fulfilled in the Coastal Plain could and will be, generally speaking, quite different from those in the Interior. For instance, a watershed management approach in the Interior is plausible, whereas in the Coastal Plain the Depression Landscape could play a key-role for further sound land use planning, both conceptually as well as in practice.

5.2.2 A conceptually sound *systems* approach

First of all the preferred **Ecological Main Structure** (EMS) should be made conceptually visible. RGB's other "giant" task is to create at least the contours of a hierarchical **Settlement Main Structure** (SMS). Both should be created first for the Coastal Plain, since this is the *most vulnerable* part of Suriname as a whole entity. Several known factors support this conclusion. For both "giant" activities, supporting legislation is, at least to a certain extent, required. But not only legislation. Awareness creation through basic capacity building for those who together constitute RGB's new institutional structure, is of paramount importance too. This constitutes a firm foundation of the new institutional and organizational **Support Structure** (SS) to be created for RGB. Awareness creation in its turn and capacity building need proper visualization (mapping) of a number of scenarios of the new main structure of Suriname. Legislation will get quicker approval in case the new **Spatial Main Structure** (SPMS) of Suriname, consisting of (at least) the two main components for which RGB is *de facto* responsible: the EMS (a priority activity) and the SMS (Settlement Main Structure creation, an essential parallel activity). Both will inherently give rise to the third pillar of Suriname's Spatial Main Structure (SPMS), the Main Infrastructure (MI). It is worth while noting that the ministries of NH and HI will, besides District Councils, other ministries and agencies play a major support role to give shape to the SMS. From a conceptual point of view, well known concepts developed in human geography will be eminent as well as satellite image analyses that will precede geo-informatics applications, within a framework of national government objectives to be achieved.

It is firmly believed that these essential activities, particularly the prioritized EMS and parallel SMS, though huge, are conditions sine qua non to create a new, innovative, national level spatial main structure to sustainable sound land use planning in and for Suriname. Parallel to this macro level activity (theoretically even before creating the EMS and more or less parallel the SMS), macro level legislation has to be developed for the under-Directorate Spatial Planning of the Ministry of RGB. This macro level legislation is a Rural Planning Act, which is actually lacking, even though it should perhaps have been the very first macro level legislation type, specifically focusing upon a spatial planning context through which all sectors are crosscutting. In order not to retard the job to be done for RGB, we do not refer to the other spatial main structure components. The main concern is concise, simple and clear: first things first, main objectives to be realized first.

While keeping these main activities continuously in mind, the contours of a solid ***Roadmap to Sound Land Use Planning in Suriname***, becomes evident. The Terms of Reference do not explicitly demand this conceptual framework of thinking, but it has a number of advantages:

- the Roadmap will be designed better if it is conceptually embedded within a wider conceptual approach (i.e. to conceptualize an ideal spatial main structure of Suriname).
- sound land use planning needs an urgent launch, within a sound conceptual framework so as to yield greater success once land use planning *practice* is at stake.

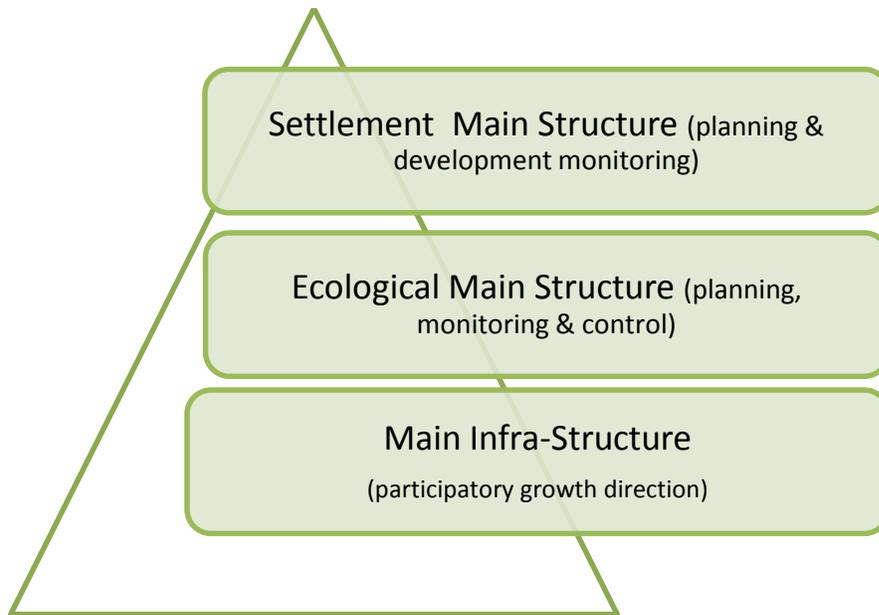


Figure 30 Schematic presentation of the main structure components of a Spatial Main Structure, constituting a conceptual framework for Sound Land Use Planning in and of Suriname.

5.3 Adopting a pragmatic procedural approach to SLUP practice: from macro to micro level.

Suriname consists of at least 95% rural lands, of which a part is rural-agricultural. Sound Land Use Planning will therefore be largely focused upon rural land use planning, including rural-urban fringe zones and sub-urbanizing areas in order to prevent unwanted, haphazard spatial development at the cost of valuable natural lands, to guide, channel and keep spatial-economic development on (top of) natural land under (appropriate legislative) control. The figure below summarizes the entire (as is actually perceived) sequence of activities in terms of subsequent(sub-)processes that need to be executed to make sound land use planning operational in particularly the Coastal Plain. Both the Interior and Coastal Plain lack a structural approach to avoid unnecessary land degradation. Legal Establishment and spatial embedding of a large scale protected "zone" in the Coastal plain (to start with) is a condition to be fulfilled for sound land use planning, for the wider framework of spatial planning and environmental protection. Moreover, this effort will simultaneously introduce both, in a top-down and bottom-up fashion, the new concept of sound land use planning in Suriname, i.e. the de facto foundation of inclusive (participative, sector-spatial integrated) spatial planning

in Suriname. Our tentative proposal to make this approach operational is illustrated in the following figure:

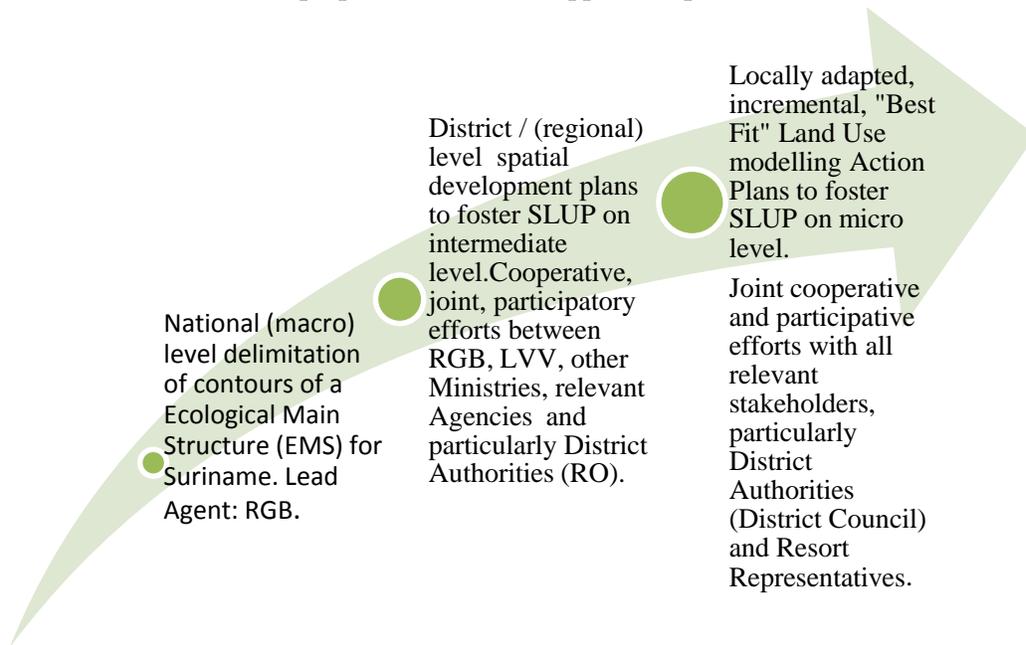


Figure 31 A possible systems approach to prevent land degradation; Sound Land Use Planning Practice made feasible.

The above mentioned feasible systems approach to SLUP needs to be worked out further of course. It appears that there is enough scope for this model to work due to positive as well as negative factors. A negative factor is the actual state of domain land that has been supplied countrywide and for which evidence has to be sought at GLIS. A positive factor is that without the above systems approach or whichever incremental approach for prioritized districts, there seems to be no real alternative, in our opinion. For RGB as well as for District Authorities, potentially a lot of synergy can be achieved. At the side-line, however, RGB's relationship with the Ministry of Agriculture should be strengthened more, for reasons of swiftly effectuating SLUP in Suriname. Encouraging owners to maintain their leasehold etc. land may create an unwanted and strong conflict of interest with one of the main objectives to prevent land degradation: owners will start clearing land which will increase land degradation. Finally, successes with participatory approaches will largely depend on the ratio between conflicts of interest and harmonies of interests with regard to intended land use as well as the ease of turning a conflict of interest into a situation of harmony of interest. Decision making models to be applied will therefore basically imply "authoritarian", "participative" or "conflict" decision-making models. All of these models will most probably be active because of Suriname's specific land right distribution, though our main concern is the participative model. There will anyway implicitly be a drastic increase of decision-makers during a SLUP-trajectory than is presently the case and a higher democratic content, leading to an entropic situation. This may need more coordination and perhaps some simulation at local level. After all, what is finally aimed at with SLUP on regional and particularly national level, is a balanced distribution of growth in harmony with nature instead of creating regional imbalances, a.o. through non-participatory, enforced, authoritarian decision-making in

a hierarchical system. The figure below attempts to visualize the process from initial, unplanned reality to strategic spatial plan as has been done elsewhere.⁸⁴

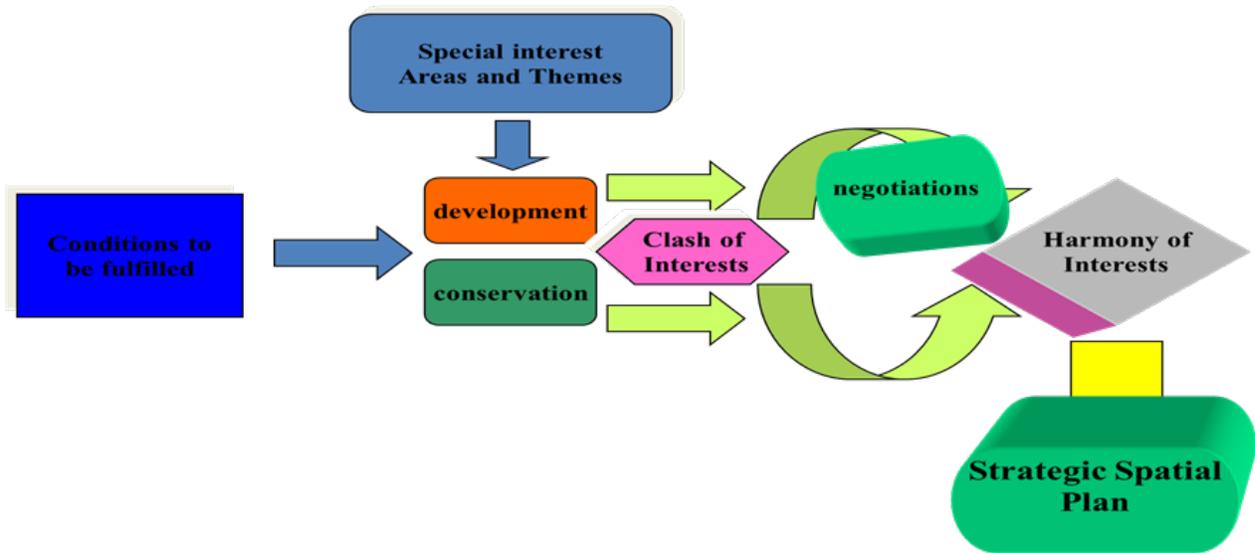


Figure 32 Participatory decision making and inclusion of interests on different scale levels.

The Ministry of RGB, i.e. the under-Directorate of Spatial Planning, is for a significant number of reasons urged to close cooperation with District Authorities and the Ministry of Agriculture. The latter because their impact on space use is large, with multiple side-effects. The former, since they prove to know their district best. Moreover, their involvement with development and hence implicitly land use planning, is obvious! It is to be expected that they will also, once implementation is at stake, are best suited to monitor processes and directly intervene or provide signals (as part of an "Early Warning System" to monitor land use transformations at RGB) to the Ministry of RGB and / or RO or LVV, for rapid intervention.

⁸⁴ Governance and Development Program Kosovo, UN-Habitat-Institute of Housing and Urban Development Studies, Erasmus Univ. Rotterdam, 2003-2007.

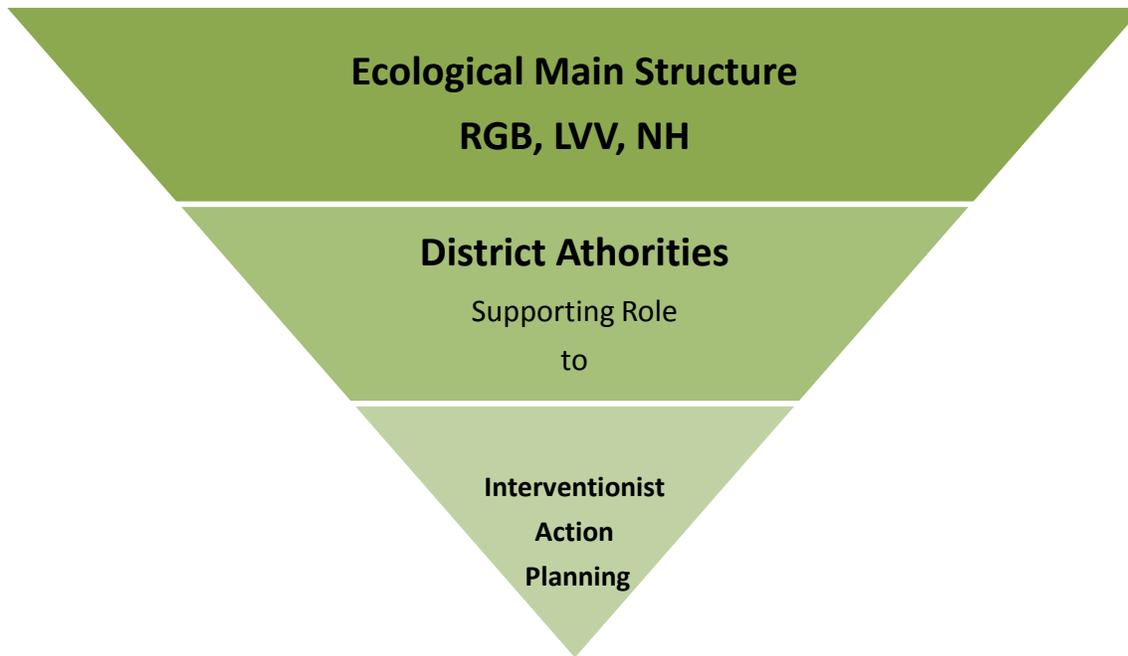


Figure 33 Ecological Main Structure design and main ministry-actors for rural land use planning

5.4 Procedural aspects of land use planning

Land use planning in Suriname is at a basic level and needs systematically launched impulses through a. o. rapid and intensive capacity building but also awareness creation to reach a take-off state. However this may consume some time, but the relatively strong institutional position of the Ministry of RGB is a relatively good foundation to success. Theoretically, land use planning, spatially follows a top-down route: from large, national level, via regions / districts, to small, neighbourhood level. A significant condition to be fulfilled however is that there should be enough government land available. Since it appears that "most government land" has been distributed to individuals etc., this desired and ideal option to embed sound land use planning seems to have vanished. Even at the MI-GLIS office there is no complete mapped evidence to underpin the abovementioned statement, but since all noses point at all levels point approximately in the same direction, it may be assumed that the statement doesn't seem to be false. For now, and given the relatively high probability regarding the actual freehold land situation as compared to available government (domain) land, we strongly tend to develop alternative options which have been developed elsewhere to cover similar situations of a (severe) lack of domain land.

5.4.1 Possibilities and limitations to a conventional macro level approach

As mentioned before, no land use planning is actually practiced in a systematic and coordinated manner. Most approaches to land use planning have a strong mono-thematic orientation. Implicitly, this phenomenon already indicates the lack of coordination since basically one single actor is involved with one theme. In previous chapters this has been articulated already including reasons. To summarize: mainly the ministry of RGB is through their land allocation duties, somehow multi-thematically involved with a systematic approach in a reduced way and active with a basic form of land use planning. It is basically the

only ministry that involves other ministries, particularly LVV, RO and NH as well as District Authorities, with the ongoing land allocation process. Within this context, RGB is partly dependent upon advises given by the other ministries. The ministry of Public Works formally executes somehow even more land use planning related activities than RGB, but their activities pertain to urban areas and are on aggregate (very) small of scale. At the same time, the ministry of OW often requires RGB's approval first, e.g. concerning land allocation alterations. This implies a strong dependency relation from OW of RGB. RGB is thus enabled to steer developments to a certain (and possibly large) extent. Besides, the considerable (predominantly) mono-thematic activities of SBB and Nature Conservation, whose activities are basically land management oriented, are highly valuable passive land use planning assets. Their activity pattern structures relatively large tracts of land, protects them and lays a proper foundation for active land use planning. In order to materialize a macro level land use planning approach, information from the NPO regarding national development (priorities), could give direction to sound land use planning.

5.4.2 Identify vulnerable areas and prioritize key-districts for quick Action Planning: a strategic interventionist approach to sound land use planning practice

Analysis of Suriname's spatial main structure and above all, answers from basically District Authorities to our questionnaire which has been designed specifically for that target group, resulted in a partially very recent birth of a conceptual approach to implement sound land use planning, in a feasible way. This procedural approach to make the conceptual approach operational is considered to yield a potentially high rate of success, given a number of related conditions to be fulfilled (e.g. rapid, intensive Capacity Building at different decision-making levels). It is hopefully to be understood that this very recent concept needs evolution into a more mature approach. As for now, it appears to possess enough elements for sustained further development itself.

An Ecological Main Structure for Suriname doesn't exist as yet. To realize this crucial objective, a number of activities have been carried out so far resulting in delimiting a number of areas to be (partially) protected. Delimitation and designation was done on a piecemeal basis however and generally not pro-active. A structural approach for the entire territory is a must now, for the Interior as well as for the Coastal Plain. Particularly for the latter, a detailed approach is at stake, since the area is much smaller, far less homogeneous, with a much bigger land unit diversity and more important: far more disaster prone. Not the least because of its vulnerability to increased population pressure and subsequent unwanted invasions, haphazard occupation and unauthorized settlement. The Geo-factor "human being" deserves special attention continuously indeed. Foreseen and required Infrastructure improvements to foster economic development may far more soon than expected cause unwanted land degradation. Delimitation of a sound Ecological Main Structure (EMS) will effectively protect unique land units and prevent land degradation on an area with a significant size and consolidate its wildlife. Associated awareness creation campaigns by representatives of all stakeholders will increase the probability that such an EMS will function as a pro-active protective buffer in the Coastal Plain against negative environmental effects of ill-situated large scale economic development. Such developments usually trigger land supply mechanisms of owners of large tracts of land obtained, apparently for speculative purposes including away to build financial reserves. Once an EMS is delimited and its designated and foreseen status is legally approved too late, many (rather) unique land and associated (basically fresh)water units, may degenerate. This has to be prevented as soon as possible. To start with, RGB / Nature Conservation Department should be alert and monitor

developments using air- and space borne reconnaissance survey methods and techniques. In the above figures 13 and 14 a tentative sequence of activities is portrayed to realize this goal. As can be seen, all stakeholders participate on all decision-making levels. The figure above requires a number of conditions to be fulfilled. Within this perspective, reference is made to the urgent need for a typology of districts to be made, not merely for the sake of LUP, but also to prevent land degradation on local level, based upon a shared vision. Districts have a number of specific and (clearly) different objectives. This may possibly hamper the quickest possible support to (large scale) environmental protection. This may be the case for the wide ribbons, constituting foreseen residential areas and crosscutting the territory as a result of the implementation regulation (State Order) under the Urban Planning Act⁸⁵. This area seems to be institutionally vulnerable and prone to disputes as to the authority to *spatially* organize and plan for, since multi-disciplinarily, planning for both active and passive land uses, is a *conditio sine qua non*. This amendment led to a striking situation, since most urbanized areas actually experience huge management problems, because the Urban Planning Act has not been successfully applied for about 40 years. Still, the application area of particularly this Act has been extended drastically. Instead, (multi-purpose) "Integrated Rural Planning Zones" (IRPZ) or perhaps "Multiple Use Planning Areas" (MUPA's) should be introduced and demarcated to solve among others urgent housing needs within the framework of a contemporary (multi-sector, spatially integrated), innovative Corridor Planning approach.⁸⁶ This action of the ministry of OW exemplifies and exaggerates problems regarding the typical land use planning situation in Suriname substantially. A marked possibility to significantly improve coordinated land use planning has vanished. Introducing IRPZ's or MUPA's would urge for a compulsory multi-disciplinary approach, foster institutional strengthening in support of sound land use planning and facilitate prominent incorporation of different national development objectives. Moreover, all available land use planning skills and professionals could be utilized at a time, preferably coordinated by RGB, LVV and the NPO.

Legislation can sometimes cause blockades to preferred spatial-economic development. Such may be the case with the modified Urban Planning Act, which, as is understood by now, basically meant to prevent ribbon development and/or for building control purposes. Ribbon development is however of all times and places and brings development, even to remote areas. Ribbon development is a.o. a reflection of demands for land to facilitate economic development and fulfil basic needs like personal income creation and housing. To what extent development is evenly distributed through ribbon development, without causing regional imbalances, may be an issue indeed. So far, with a zone of 500 m at either side of roads, ribbon development could not be prevented. Within such a 1 km. wide zone, allotments for nuclear settlement creation in a spatial planning context were quite well possible. But land use planning was apparently not at stake. Besides, the ministry of RGB did not exist. The zone is now drastically extended to 5000 m. at either side of main roads, implying the area designated as residential area ("*woongebied*"). This strategy is disputable. It is questionable whether the objective of preventing ribbon development will be successful now. Indeed, curiosity is created about the logical (conceptual) underpinning of the proposed and already approved legislative amendment. Questions arise about the validity of the assumption that such wide "ribbons on national scale level" which radically change the social-spatial and inherently spatial-economic structure, including investment and economic development opportunities, will prevent ribbon development. The (non-exhaustive, tentative) conclusions are that the "area of interest" is prone to organizational,

⁸⁵ S.B 2014 no. 89

⁸⁶ Kooijmans, J. Corridor ontwikkeling in Suriname; de potentie van de as Paramaribo-Zanderij. Master's thesis Urban Geography, Faculty of Geo-sciences, Utrecht University i.c.w. the National Planning Office, 2013

procedural and institutional conflicts of interest between ministries. In case, as can be deduced, the demarcated zones which obviously cross through the available territory as disturbingly wide *planning ribbons*, are meant to facilitate the increasingly popular, evidently multi-disciplinary, regional planning approach to spatial planning which is referred to as "corridor development"⁸⁷, several ministries will be from the onset involved in close cooperation. However, these artificially created "planning ribbons" factually cross-cut through and mainly consist of often still untouched natural lands with variable economic potential from a **natural resource** perspective, are now far too long before designated as "residential" area. Implicitly other land uses are thus ignored, both active as well as passive. Unnecessary, institutional and organizational competitive (spatial, including land use) claims for authorization to plan, based upon other legislation, will be generated inherently. This should be avoided timely, for instance through a process of intensive analysis of this new extended piece of planning legislation which refers to the **Urban** Planning Act but mainly applies to almost entirely and even remote **rural** areas (read: natural lands) and implicitly agricultural areas now. In case these zones are aimed at controlling the quality of allotments for housing by OW, it is a peculiar justification given all land subdivisions including their striking shortcomings and costly management problems that were consequently caused in and around the Greater Paramaribo area during the past 40 years.

⁸⁷ Kooijmans, J. , see above.

6 Lessons learned in Comparable Countries

6.1 Scope of work

The Consultants are required to identify useful best practices and lessons learned of sound land use planning (LUP) in countries similar to Suriname. Specific reference is made in the Terms of Reference (TOR) to the status of land use planning in the neighbouring countries of French Guyane and Guyana, which are said to be way ahead of Suriname in this field.

Although both of these countries are geographically similar to Suriname, in practical terms French Guyane is not comparable to Suriname. It is acknowledged in the TOR that land use plans for the whole of French Guyane exist; however, as an integral part of France and the European Union, French Guyane has access to human, material and financial resources which are not available to Suriname. In terms of its population size, level of development and institutional capabilities, Suriname is more closely comparable to other CARICOM countries (with the exception of Haiti, which has a population of 7.5 million), in particular, the neighbouring country of Guyana which is one of the few CARICOM countries which is geographically large enough to have a system of local government like Suriname. This review therefore focuses on the status of LUP in the CARICOM countries, with particular reference to Guyana, and lessons learned that are applicable to the strengthening of LUP in Suriname.

6.2 Evaluation of LUP in CARICOM countries

This section offers a broad overview of the history and status of LUP in the CARICOM countries other than Haiti. Only passing reference is made to Guyana since the next section deals with Guyana in more detail. With the exception of Guyana, Belize (another continental country), Jamaica and Trinidad & Tobago, the CARICOM countries to which reference is made are too small to have a system of local government; consequently all LUP powers are exercised by national level institutions. In Guyana, Belize, Jamaica and Trinidad & Tobago, national institutions share responsibilities for LUP and/or the control of land development with local government bodies.

6.2.1 Legal & Institutional Framework

Elements of a system of LUP have long existed in the CARICOM countries in the form of municipal by-laws and the control of land subdivision and building development under public health legislation, the precursor of modern LUP and environmental legislation. Given their narrow concern with development control in human settlements, however, these measures generally did not extend beyond built-up areas. Moreover, these measures cannot be characterized as involving the forward-looking process of land use planning, as reflected in the FAO definition referred to in the Introduction.

Land use planning in that sense was first introduced into the region in 1939, as a result of the findings and recommendations of the Commission of Enquiry into the mass political protests, strikes and riots which took place which took place throughout the British West Indies during the Great Depression. This led to the introduction of a *Town and Regional Planning Ordinance* in Trinidad & Tobago, responsibility for the administration of which was vested in the Housing and Planning Commission established by the *Slum Clearance and Housing Ordinance* enacted the previous year. The model of LUP pioneered in Trinidad & Tobago was exported in part or in whole to many British Commonwealth countries, including most other

Commonwealth Caribbean countries, where virtually identical legislation was enacted and a similar agency was established.⁸⁸

Although it was adopted in some CARICOM Caribbean countries (including Guyana) after World War II, this legislation is based on the English *Town and Country Planning Act* of 1932. The basic distinction between this legislation and the more modern LUP laws in the region is that the LUP and development control powers conferred by the legislation applied only to designated urban or rural areas, with respect to which the relevant authority has decided, by resolution published in the official *Gazette*, to prepare a town or regional planning scheme, and not to the country as a whole. In some CARICOM countries (notably Guyana) legislation based on the 1939 Trinidad & Tobago *Town and Regional Planning Ordinance* is still in force.

The deficiencies of the pre-World War II planning legislation resulted in several major studies which culminated in the introduction of radically different planning legislation in England in 1947. The basic principles of modern LUP law, to which only incremental changes have subsequently been made, were crystallized in this legislation. This 1947 English Act served as the model for the *Town and Country Planning Acts* adopted in Trinidad & Tobago in 1960 (but brought into force in 1969) and in Barbados in 1965 (with effect from 1968). The main features of this legislation are that the relevant authority must prepare a national LUP and is empowered to prepare more detailed LUPs for parts of the country afterwards; the entire country is subject to development control; permission is required for the development of land (with specific exceptions); and development control should be carried out with reference to the development plan.

The LUP provisions of the legislation of this era are relatively specific as to the contents of land use plans, the processes of plan preparation, approval and revision, including public participation in those processes, and plan implementation. As regards public participation, the legislation is relatively weak, reflecting contemporary beliefs in the omniscience of the professional planner, and provides only for consultation with institutional stakeholders during the plan preparation process and public hearings before adoption of the draft plan by the Minister or Parliament as the case may be. The principal weakness of this type of legislation lies in the provisions for plan implementation. These are limited to the compulsory acquisition (expropriation) by the State of land for comprehensive redevelopment and the control of private land development, which is not a proactive process. Since the prescriptions of the land use plan are not binding and simply indicative of public policy, statutory land use plans are only one material consideration in processing applications for permission for private land development and there is no link between development by the public sector and the land use plan.

In the case of the larger countries in the region, Guyana, Belize, Jamaica and Trinidad & Tobago, the LUP legislation made provision for local government bodies to play a role in the LUP process. Under the 1939 Trinidad & Tobago model legislation still in force in Belize and Guyana, provision was made for local authorities to formulate LUPs for adoption by the national LUP agency; however, there is no history of this window for “bottom up” LUP having ever been utilised. Generally, the role of local authorities has been limited to exercising development control functions as delegates of the national LUP agencies. In Trinidad & Tobago where development control functions were never delegated to local government, the retention of

⁸⁸Home, Robert, “Transferring British Planning Law to the Colonies: The Case of the Trinidad Town & Regional Planning Ordinance.” *Third World Planning Review* 15[4] 1993, pp.397-410

sole responsibility for processing individual applications by central government has been the principal reason for the skewed allocation of LUP resources in favour of development control, resulting in the failure to prepare and roll over the national LUP on a timely basis and to produce any statutory regional or local area LUPs.⁸⁹

In the late 1960s to mid-1970s many of the Organization of Eastern Caribbean States (OECS) countries adopted relatively short, simple pieces of development control legislation, without repealing the obsolete related slum clearance, housing and planning laws. Under this type of legislation the permission of the Development Control Authority (DCA), a statutory Board comprised of representatives on relevant government agencies and private sector stakeholders, was required for all development of land in the country. In some cases, the legislation maintained a legal link between development planning and development control. In St. Lucia, for example, the DCA was expressly made responsible by for the administration of the obsolete *Town and Country Planning Ordinance*. In other cases, for example in Grenada, no mention was made of the earlier legislation, either by way of repeal or by way of arrangements for its continued administration. In any event, the obsolete LUP legislation fell into disuse in all the OECS countries.

In 1992, St. Vincent & The Grenadines became the first OECS country to adopt a new *Town and Country Planning Act* which contained many novel provisions. It made provision for the matters to be studied and monitored by the relevant authority; the preparation of a hierarchy of local, regional and national development plans; the publication of certain applications for public comment; the material considerations to be taken into account in processing applications; and the submission of Environmental Impact Assessments (EIAs) with respect to certain applications. Many of the provisions of this Act were incorporated into the *OECS Model Physical Planning Act* prepared in 1994 under the UNCHS Human Settlements Project in the OECS Countries, which was subsequently customized for several of the OECS countries.

Generally, changes to the legal and institutional framework for LUP in the region have been slow in coming, even when weaknesses in the legislation are widely recognized. The failure to repeal and replace the obsolete 1957 planning legislation in force in Jamaica, despite changes in the institutional arrangements for its administration, exemplifies this problem. Only in Barbados has the *Town and Country Planning Act* been amended several times since 1965, to strengthen and modernize it by keeping it abreast of changes in English planning law. Additionally, the principal Act has been supplemented by the enactment in of the *Trees (Preservation) Act* in 1981, the *Special Development Areas Act* in 1996 and the *Coastal Zone Management Act* in 1998. Efforts to update the obsolete 1960 legislation in Trinidad and Tobago failed repeatedly; however, it has recently been repealed and replaced by the *Planning and Facilitation of Development Bill 2013* enacted on 28th July 2014, which has not yet come into force.

⁸⁹ Several draft regional LUPs and some draft local area plans were prepared for different areas within Trinidad & Tobago during the 1970s, when the capacity for LUP was at its peak; however, these draft LUP were never taken through the legal process for approval as statutory plans.

6.2.2 Planning Successes & Failures

Land use planning has been described as an activity that has been marginalized in the region.⁹⁰ Few countries in the region have exercised, or even attempted to exercise, the powers conferred by the LUP laws in force to produce national, regional or local areas plans, even where there is a legal obligation to prepare such plans. Moreover, those who have eventually done so have failed to comply with their obligations to review and revise these land use plans periodically. For example, in Trinidad & Tobago, the CARICOM country with the most resources and greatest institutional capacity for land use planning, the 5-year time limit for the preparing a national land use plan after the coming into force of the Act in 1969 was extended repeatedly until the National Physical Development Plan was adopted 15 years later in 1984. Moreover, the legal requirement that the National Plan must be reviewed and, if necessary, revised every 5 years after its adoption has not been met in the ensuing 30 years, despite repeated donor-funded efforts to achieve this result.

The preparation of land use plans for all the islands was one of the elements of the UNCHS Human Settlements Project carried out in the OECS Countries in the 1990s. Land use planners, including regional LUP consultants and UN Volunteers, were embedded in all the agencies in OECS countries with responsibility for LUP and equipped with modern hardware and software to undertake the preparation of national LUPs for all the islands. However, it appears that none of the draft National Physical Development Plans prepared under this project were ever formally adopted by the relevant authorities. One reason for this may be that some years passed before the new planning legislation based on the *OECS Model Physical Planning Act*, which provided the legal machinery for the preparation and adoption of statutory plans, was enacted in each jurisdiction. In any event, several of the OECS countries have been engaged with donor-funded technical assistance in the review of these draft National Physical Development Plans over the past few years.

Barbados is the only country in the region which has achieved substantial compliance with the LUP provisions of its legislation. The first Physical Development Plan for Barbados was published in 1970 and came into operation in 1976. This was reviewed and replaced by the second such plan published in 1986 which was adopted in 1991. This was in turn reviewed in light of changing circumstances and policies and replaced by the third Physical Development Plan in 2003. Several possible reasons can be given for the exceptional success of LUP in Barbados. Firstly, the LUP agency in Barbados has a high profile and exercises its LUP, development control and enforcement powers effectively. Secondly, there has always been substantial political support for LUP in Barbados, as reflected by the fact that the Prime Minister has served as the Minister responsible for LUP in the present and previous administrations. Thirdly, Barbados has historically been a stable and well governed country with a culture of law and order, including general voluntary compliance with LUP law.⁹¹

⁹⁰ Armstrong, James, Overview Report on the Human Settlements Sector in the OECS, UNCHS Habitat (1989)

⁹¹ Barbados is ranked as the most stable country in the region according to the Failed States Index compiled by the Fund for Peace and, despite its high population density and lack of natural resources, is the highest rank country in Latin America and the Caribbean according to the UNDP's Human Development Index, having achieved "developed country status" in 2010. Much of this success has been attributed to the Social Partnership model of governance adopted by Barbados in 1991 (in which government, the labour movement and the private sector are involved in a tripartite consultative negotiating mechanism for policy making and economic development), which has been identified as a replicable model for other SIDS.

Hence, Barbados has been able to utilize the Physical Development Plan as a tool for development control, as contemplated by the relevant legislation. This contrasts with the ad hoc system of development control that prevails in other CARICOM countries in the absence of approved LUPs. The lack of transparency that is inherent in ad hoc decision-making on development applications is the major reason for the bad reputation that LUP has achieved in the region. Moreover, up until recently (and this is still the case in some countries, such as Trinidad & Tobago) LUP legislation did not apply to the control of development by the State. Hence, only private sector developers had to apply for planning permission and, where required, carry out EIA studies, with the result that LUP was perceived as an obstacle to private sector development. Additionally, the lack of LUPs became a self-perpetuating problem as planners were diverted from LUP tasks to development control activities, due to the political pressure to deliver timely decisions on applications for planning permission under this inefficient system.

6.3 LUP in Guyana

Geographically, historically and in terms of the level of human development Guyana, which borders Suriname on the west, is very similar to Suriname. Both are continental countries which, although small in the South American context, are very large relative to other CARICOM countries, including Belize the only other continental country. As neighbouring countries on the Guiana Shield, both Guyana and Suriname have a similar geographical dichotomy between the coastlands and the interior, which is reflected in their historical land use patterns. Essentially, the major towns and agricultural areas are located in the coastlands whilst in the interior, with the exception of transportation corridors, dispersed mining areas and limited areas of indigenous settlement, the natural ecosystems remain substantially intact.

Although the geographical area (some 215,000 Km²) and resident population (approximately 750,000) of Guyana is somewhat larger than those of Suriname (approximately 165,000km² and 570,000 persons), the low population density of both countries (Suriname 3 persons/km²; Guyana 3.5 persons/km²) is comparable. Moreover, both countries have suffered from a “brain drain” through high rates of emigration since attaining independence in 1966 (Guyana) and 1975 (Suriname) respectively, having endured periods of dictatorship and civil strife until the 1990s. As a consequence of these geographical challenges and historical misfortunes, the level of development in Suriname and Guyana as measured by the UNDP Human Development Index is below that of other CARICOM countries, with the exception of Haiti.⁹²

Like Suriname, Guyana is a republic with a 3-tiered system of democratic government. Under the 1970 Constitution and the 1980 **Local Democratic Organs Act**, the system of local government in Guyana is comprised of 10 Regional Democratic Councils (RDCs), under which are 6 Municipal Councils (MCs) responsible for urban areas and 65 Neighbourhood Democratic Councils (NDCs) responsible for rural areas.⁹³ The powers and duties of these local government bodies are provided for partly by the **Local Democratic Organs Act** and partly by older legislation providing for the previous system of local government, the **Municipal and District Councils Act** enacted in 1969, which applies to RDCs and MCs, and the **Local Government Act** of 1945, which applies to NDCs as it used to apply to the former Village

⁹² Both Suriname (HDI Score 0.684; World Rank 105) and Guyana (HDI Score 0.636; World Rank 118) are classified as having attained a “Medium” level of human development, whereas most other CARICOM countries have attained a “High” level, the exceptions being Barbados, which is classified as having attained a “Very High” level, and Haiti, which is “Low”.

⁹³ There are no MCs or NDCs in Region 8 (Mazaruni), so the lowest tier of local government is lacking in this remote region.

Councils. The functions of the RDCs and MCs under the governing legislation are wide-ranging and include responsibility for drainage and irrigation, roads, water supplies, burial grounds, the subdivision of land, and miscellaneous other matters related to LUP and development control. The NDCs are entrusted with the management of the administrative and financial business of the village and its government generally, which is wide enough as to include some role in and responsibility for LUP at the local level.

6.3.1 LUP under the CHPA

The principal law governing LUP in Guyana is the old 1939 Trinidad & Tobago model *Town and Country Planning Act* enacted in 1946. The Central Housing and Planning Authority (CHPA), a national level agency established by the *Housing Act*, is responsible for the administration of this legislation, which empowers the CHPA to prepare three classes of LUPs, town planning schemes, regional planning schemes and supplementary schemes for areas within regions (equivalent to local area plans). Of these, the only class of plans to have been made by the CHPA under the Act during the past 68 years is town plans.

Under this legislation, the CHPA's LUP powers crystallize when it adopts a resolution to prepare a LUP for a specified area and that resolution is published in the official Gazette.⁹⁴ This brings land development in the area under "interim" control by the CHPA pending completion of the LUP. Hence, the Local Democratic Organ for the area must submit all applications and proposals for development to the CHPA for approval. No time limit is set by the Act on the period during which an area may remain under "interim" development control pending the preparation and approval of a LUP. During the 1960s several such resolutions were made and duly published bringing the coastlands from the Pomeroon in the west to the Corentyne in the east, the east and west banks of the lower Demerara River and the village of Lethem on the border with Brazil under interim control, but LUPs have never been prepared for these areas. The only approved LUPs prepared by the CHPA are for the towns of Georgetown (1951); New Amsterdam (1969); Bartica (1986); Linden (1987) and Anna Regina (1998).

In 1966, 20 years after it came into force and nearly 50 years ago, a review of the Act was carried out for the then Government of Guyana by a foreign expert.⁹⁵ That report identified many deficiencies in the development control, appellate and enforcement provisions of the Act, most of which are still valid, and these have been added to by subsequent reviews. These reviews have devoted less attention the LUP provisions of the Act, which contain both strengths and weaknesses, but are likewise in need of modernization. A detailed review of the LUP provisions of the Act was made under the EU-funded Guyana Development of Land Use Planning Project in 2013.⁹⁶ Draft legislation to repeal and replace the 1946 Act was prepared by IDB consultants in 2006.⁹⁷ Unfortunately, the draft legislation prepared by the consultants was merely a customization of the *OECS Model Physical Planning Act* which was not appropriate for a country with a system of local government and it is not expected that it will ever be enacted.

⁹⁴ Hence, there is a parallel between this legislation and the 1972 *Urban Planning Act* in Suriname, which applies only to specific residential areas brought under the LUP jurisdiction of the Ministry of Works by State Order.

⁹⁵ Knewstubb, E.W., MTPI, FRICS, *Report on Town and Country Planning and Housing, Ministry of Housing and Reconstruction*, Government of Guyana (1966).

⁹⁶ Toppin-Allahar, Christine, *Legislative Review*, Guyana Development of Land Use Planning Project; HTSPE Limited (2013)

⁹⁷ Daniel, Judy & Dr. Yolanda Alleyne, *Legal Reform Consultancy on Planning Legislation in Guyana*, Low Income Settlements Program, IDB (2006)

As mentioned previously, the formula of having the agency created by housing legislation take on responsibility for the administration of separate LUP legislation was once common throughout the Commonwealth Caribbean. With the exception of Dominica, where the pre-existing institutional arrangements were continued by the new LUP legislation enacted in 2002, this organisational structure has been abandoned in every other Commonwealth Caribbean country. As the administrator of both the *Housing Act* and the *Town and Country Planning Act*, the CHPA is “wearing two hats” and its dual role as both one of the major land developers in Guyana and the agency responsible for the regulation of land development amounts to a conflict of interests. Additionally, quite apart from the demands placed on it by its mandate under the *Housing Act*, the CHPA is overwhelmed by its development control functions. This split mission accounts for the substantial failure of the CHPA as a LUP organization over the past seven decades.

6.3.2 LUP under the GLSC

In 1999 power to prepare LUPs for areas other than the municipalities was conferred on the Guyana Lands and Surveys Commission (GLSC) by the *Guyana Lands and Surveys Commission Act*. Although the Act confers this function on the GLSC, it contains no substantive or procedural provisions concerning the plan preparation or approval process and the legal status of LUPs. This is not an inadvertent omission as the Act contains no such provisions with respect to any of the other functions of the GLSC, which are supported by separate pieces of legislation. Hence, it is necessary for the *Guyana Lands and Surveys Commission Act* to be supplemented by legislation governing the LUP functions of the GLSC in due course and comprehensive draft *Land Use Planning Regulations* to be made under the Act were prepared as part of the EU-funded Guyana Development of Land Use Planning Project in 2013.

To date the GLSC has prepared two LUPs – a regional LUP for Berbice (Region 6) and a National Land Use Plan. The Berbice LUP was prepared internally during the period when the GLSC was headed by a qualified and experienced land use planner.⁹⁸ This appointment was unprecedented as the office of Commissioner of Lands and Surveys has traditionally been filled by a sworn Land Surveyor. Hence, this LUP exercise took place in exceptional circumstances and is not indicative of the LUP capacity of the GLSC. However, under the EU-Funded Guyana Development of Land Use Planning Project (DLUP), in 2013 the GLSC produced a National Land Use Plan with technical assistance from a consortium of UK consultants. These consultants were embedded in the embryonic LUP Unit within the GLSC with the objective of transferring skills to their inexperienced local counterparts.

It should be noted that the Act did not transfer any responsibility for development control outside of the municipalities to the GLSC. Hence, the control of land development at the local level in declared rural areas is still being undertaken by the NDCs. Where this involves building operations and/or the change of use of land, development is controlled under CHPA-administered the *Town and Country Planning Act*, but control of the subdivision of land is carried out by the local authorities pursuant to the old *Public Health Ordinance* and their own enabling legislation. A central LUP unit is being developed within the Ministry of Local Government to backstop all the local authorities in the discharge of their LUP functions. This is still its infancy but is a promising innovation to address the problem of a lack of capacity for LUP at the level of local government.

⁹⁸ Mr. Andrew Bishop, who was subsequently appointed Advisor on Sustainable Development in the Office of the President.

6.4 Lessons Learned

On the balance, the LUP record of the CARICOM countries over the past 75 years since LUP legislation was first introduced in Trinidad & Tobago has been poor. The principal reasons for this failure can be summarized as follows:

- LUP has generally been a secondary task of a national level agency with another important mandate (public housing and/or development control) with the result that resources are diverted from LUP to competing tasks;
- In countries where a system of local government exists, the failure to share LUP functions with local administrations is reflected in the failure to produce a hierarchy of LUPs;
- The legal provisions concerning public participation in the LUP process are weak, generally resulting in an out-dated “top-down” LUP process and lack of “ownership” of LUP by the wider community;
- The legal mechanisms for the implementation of LUPs are generally limited to the compulsory acquisition of land for redevelopment and development control – critically there is no legal link between approved LUP’s and public sector development programmes;
- Even where LUPs have been prepared and formally adopted, there has been a failure to comply with the requirements to review and revise them periodically and this failure to “roll-over” plans means that they quickly become obsolete;
- As a result, after the LUP formulation and approval stages, LUPs are virtually shelved or abandoned;
- Donor-funded technical assistance for LUP activities has produced only short term results and limited impact after completion of the project cycle;
- Lack of political support for LUP is a major problem - this can be attributed as much to the failure of planners to deliver timely and relevant LUPs as it is to politicians’ desire for flexibility in decision making.

6.5 Applying Lessons Learned to Suriname

Based on the lessons learned from the difficult history of LUP in other CARICOM countries, the following key points should be taken into account in developing the system of LUP in Suriname:

- LUP functions should be placed in an agency/agencies where there are synergies with other functions (other functions should complement - not conflict with - LUP functions);
- Personnel responsible for preparing LUPs should be dedicated to this task (not have competing responsibilities);
- All LUPs in the hierarchy (national, regional/district and local area LUPs) need not be prepared by the same agency provided that the prescriptions of LUPs lower in the hierarchy are consistent with those higher in the hierarchy;
- If technical assistance is granted to engage consultants to prepared LUPs, arrangements must be made for a transfer of skills to local counterparts in order to build up the capacity for LUP in the agency/agencies responsible for LUP;
- Public participation in the LUP process is key to community ownership of and compliance with LUPs;
- Public sector investments must conform to the LUP and be subject to the same controls (including EIA requirements) as private sector initiatives;

- The legal framework for LUP must be clear and robust and the legislation should be kept up to date with changes in circumstances and best planning practice;
- Political support for LUP is essential – this will not be forthcoming if LUPs do not deliver gains for the country.

7 Roadmap for SLUP in Suriname

The proposed Road Map for SLUP in Suriname [Annex 3] provides an overview of steps that matches a set of goals with the aim to support the sub-directorate of Spatial Planning of the Ministry of RGB, in close collaboration with other Ministries and agencies of the GOS to develop a support structure for sound land use planning (SLUP) in Suriname, using a participatory multi-stakeholder approach.

These steps are enumerated as the activities that are necessary to attain the goals and objectives in five policy areas which are fundamental to developing sound LUP. Since all the steps along the road cannot be taken simultaneously, the Road Map also shows the priority that should be accorded to the various activities. Moreover, as some of the activities that are necessary to develop sound LUP have already been begun or completed as part of this assignment or other work, the present status of each step is also indicated in the Road Map. Additionally, potential partners, such as the other Ministries and agencies of the GOS with which RGB must collaborate closely in LUP, and potential donors, who may be prepared to offer technical and/or financial support for the various activities that should be undertaken, are also indicated. The steps to be taken in each policy area are elaborated below..

7.1 Legal Framework

The review of the legal framework revealed that the current land use planning and supporting land management legislation is outdated and has been minimally implemented. In addition, the legislation exhibits a number of shortcomings and gaps and is not aligned, resulting in conflicts in land allocation, unregulated areas, inefficient land use and land degradation.

In order to have an improved and integrated legal framework for LUP in place a comprehensive evaluation of existing LUP Laws must be undertaken. This evaluation should also include supporting land management and natural resource legislation⁹⁹. This evaluation must show which amendments and reveals will be necessary to harmonize existing LUP laws and give RGB its jurisdiction as lead agency for LUP.¹⁰⁰ Also existing drafts (draft Environmental law and ICZM law), which could play a supportive role in land use planning should be considered in this evaluation. The next step is then to draft new legislation to support coordination of LUP processes and performance of LUP functions by RGB. This should be done in close collaboration with the Ministries involved in land use planning and land management. The next step is to enact and implement new LUP legislation in the Country.

7.2 Institutional Framework

The institutional framework of Land Use Planning needs structural reinforcement, basically through amended and new legislation which is based upon contemporary SLUP approaches, procedures and anticipated practice. Ideally, all LUP tasks should have been at RGB, both urban and rural.¹⁰¹ However, the

⁹⁹ The legal review under the current project can be used as basis for the legal analysis as part from the Road Map

¹⁰⁰While discussing the proposed new organizational structure with staff from RGB, a clear gap in the existing legislation was found: there is no legislation related to land use planning that specifically mentions rural planning. A reason may be that regional planning was perhaps thought to be identical with rural planning. Since Rural Land Use Planning is actually obviously a task of RGB, a Rural Planning Act to empower RGB to perform this task is urgently required

¹⁰¹C. Toppin-Allahar& H. Schurman, Intermediate Report, Integrated Coastal Zone Management Plan, Component

situation is different and therefore all LUP institutions should be strengthened. For a large part, the capabilities of existing LUP institutions have already been evaluated. Recommendations should be made for closer coordination of LUP processes by RGB and cooperation with other LUP institutions. Besides legal embarkation of tasks, SLUP should be introduced on different scale levels. District Offices should be structurally involved. Tasks of ministries must be extended, including tasks which are regularly performed without a formal mandate, because these tasks have proven to belong to their subject area in practice. However approached, capacity building in substantive, procedural and methodological aspects of SLUP will implicitly lead to better understanding of respective themes that organizations are involved with and proper embarkation of SLUP tasks. Inherently, a synergetic situation is generated. This will inevitably strengthen the SLUP institutional structure.

Skill sets for performance of LUP task by RGB have been identified through an earlier project. The next steps are hiring of LUP consultant and recruitment of required personnel for LUP Unit in RGB.

All institutional strengthening activities are very costly, therefore the government must secure financial and material resources.

For years, the government has been faced with brain drain. In this light a strategy to grow and maintain capacity of LUP Unit needs to be developed.

Note: A non-preferable, temporary approach could be the installation of a Coordination Committee (composed of staff from different Ministries). Coordination Committees and Advisory Commissions were not installed or did not function. This may serve as a significant sign. This procedure is usually time consuming and is prone to politics and professional competence disputes based on arguable proven expertise of members; these cause substantial delays in reaching consensus.

7.3 Data, Information and Research

There is a significant need for recently collected data and information. This information is scarce. There is evidence that information exchange does not work well; bureaucracy and formalities delay activities. A known reason which counts is that information which has been gathered is considered very valuable just to exchange free of charge. As a consequence, training in contemporary data collection surveys are of paramount importance. Also basic statistical analytical methods are not well developed. Remote Sensing data collection methods and techniques are of prime importance. So are spatial visualization, data integration, also of ABS-data and their analysis using GIS. But first data are required to be collected. Essential are methods to assess data needs and their type. This relates to a sound understanding of making concepts operational into measurable variables and their measurement scale.

Mastering basic GIS-based cartographic techniques for correct symbolization is a must. A standardized procedure is required. Of great importance is the design of relevant land use classifications for different planning levels (national, regional, local) and for different types of areas (urban, rural-urban, rural).

As part of the roadmap, activities will be carried out to obtain adequate data & information for LUP. First of all, existing information must be made available. After this, the missing data and information relevant

II, 2009, (also refer to footnote 67).

for LUP will be identified and on a continual basis additional new LUP surveys and researched will be carried out to obtain new and additional data.

7.4 Sound Land Use Planning Practice and Procedures

The goal under this theme is to achieve best practice with respect to methods and procedures for LUP. A number of activities have been identified to reach this goal. Since the national development policies should provide a frame for SLUP, all the objectives of these policies will be distilled. In addition, relevant principles from international best practice will be identified, suitable for Suriname. The different land use options will be systematically assessed. The next step is to develop the different levels (national, regional and local) of Land use plans and get these formally approved in accordance with the legislation. It is expected that a participatory approach to facilitate land use planning will be embedded in the new LUP legislation. Participatory land use planning aims at achieving the highest level of participation in order to ensure that people have a greater voice in planning and decision-making, become empowered, develop ownership for planning and implementing activities and to sustainably manage their land and the natural resources they rely on. The level of participation¹⁰² will be decided upon when the legislation is being developed. It should be emphasized once more that the current legislative framework is insufficient to guarantee a rights-based approach and to ensure effective participation.

The different steps in this participatory process are identifying and consulting of institutional stakeholders and other interested groups. Also communication strategies for public participation will be developed and the public will be engaged in the LUP process.

7.5 Public Information, Education and Awareness

One of the lessons learned from the track record of LUP in comparable countries is that public understanding of and involvement in the process, and political support for LUP, are essential to its success. The goal in this policy area is therefore to raise and maintain public awareness of and political support for LUP. Two broad objectives must be attained for the achievement of this goal – public support for LUP must be mobilized and support for LUP within the GOS must be enhanced.

In order to mobilize public support for LUP it will be necessary to develop and implement a general public information, education and awareness campaign using different types of media; however, it will also be useful to identify catalysts for attitudinal changes and implement strategies to reach particular target groups (including stakeholder workshops). In order to enhance support for LUP within the GOS, steps must be taken at two levels, the administrative level and the political level. With respect to the administrative level, it is important for RGB to involve the other governmental organizations which are potential partners in the public information, education and awareness process. In addition, it is critically important to persuade policy makers and leaders of GOS to support LUP. This can best be achieved if LUP achieves positive results for the country in a timely fashion.

¹⁰² The different levels of participatory approach vary from informing, consulting, involving, and collaborating to empowerment which place final decision-making in the hands of the public.

7.6 Prioritization

As mentioned above, the Road Map shows the priority that should be accorded to the various activities. It should be noted that the level of priority (high, medium or low) assigned to an activity in the Road map is an indicator of its urgency – so that high, medium and low priority are indicative of activities that should be undertaken in the short, medium and long term respectively – and is not an indicator of the relative importance of the activities. In other words, an activity which is ranked as a low priority is not unimportant, but can be left to be implemented further down the road. The rank that is currently assigned is provisional as it will be discussed and finalized on the basis of stakeholders inputs at the workshop.

7.7 Potential donors and tentative budget

At this stage, it is impossible to quantify precisely the costs of implementing the Road Map; however, some indication of the order of magnitude of the costs is provided by the costs of comparable projects carried out in other countries funded by various donors. The World Bank, IDB, EU, FAO, UNCHS and UNDP all have a history of supporting LUP projects, including projects in the wider Caribbean region, and can be considered as potential donors for funding implementation of the Road Map.

An online review of the costs of LUP projects funded by these donors shows that project costs vary widely depending on the complexity of the project and the size of the country. In some cases, the budget for LUP projects funded by the World Bank has exceeded US\$20 million (€15 million). However, based on the cost of the EU-funded Guyana Land Use Planning Project (€3 million) and the IDB-funded Integrated Coastal Zone Management Master Plan for the Bahamas (US\$3.8 million), it is estimated that the ballpark core costs of a start-up project to enable RGB, in close collaboration with other Ministries of GOS, to develop a national LUP for Suriname using a participatory multi-stakeholder approach, would be about €3 million (US\$ 4 million). This does not include the contribution, in cash or kind, to be made to the project by the GOS.

8 Preliminary Conclusions and Recommendations

8.1.1 Conclusions

- Land use planning should facilitate efficient land administration, land management and innovative economic development whilst safeguarding environmental quality in Suriname.
- The current legal and institutional framework in Suriname is ineffective, fragmentary and functions on an ad-hoc base, but it can provide a starting point to develop an updated, improved and harmonized framework for LUP. However, there is still a lot of work to be done to adapt legislation and increase capacity building to transform the existing system into a viable one.
- Significant bottlenecks and enduring obstacles to sound land use planning are the lack of coordination between planning agencies, overlapping planning functions and absence of highly required legislation. In addition, structurally embedded central orientation of successive governments, lack of genuine interest in rural development and the absence of a faculty of Geo- or Spatial sciences counteract LUP too.
- The current legal framework does not facilitate a practical and effective overview of tasks; LUP tasks are assigned to several institutions which are not related or coordinated. The limited capacity that exists for LUP is as such dispersed between several agencies.
- The actual LUP institutional structure is based upon dependency relations between ministries, each of whom are involved with facets of "land use planning". Highest land use allocation is a responsibility of RGB. Once consensus is reached with RGB, the ministries follow their own course independently, since a spatial development frame and legislation is lacking.
- No spatial/land use planning is taking place pursuant to the 1973 Planning Act. As a result there are no land use plans at the national and regional levels, as *intended* by that legislation. Moreover, *this* cannot be done unless legal and institutional changes are made as that legislation is inoperative. For example, the planning organs to operationalize the Act are non-existent.
- Urban Development management and control is being undertaken by the Ministry of Public Works under the 1972 Urban Planning Act and the Building Act. However, no formal structural or zoning planning is taking place under that Act. It is also noteworthy mentioning that although some land use plans for urban areas and the coastal zone have been prepared by consultants under various Government projects, these have never been formalized pursuant to the law.

- A major gap is that national/ regional/ local level land use planning for non-urbanized areas do not fall under the Urban Planning Act.
- A new Rural Planning Act must be considered to fill existing legislative gaps and identify proper land use planning tasks for the relevant institutions. The ministry of RGB should preferably coordinate the implementation of this act according to its implicitly foreseen sound land use planning tasks¹⁰³. For a country consisting of at least 95% of rural land, the absence of specific rural (development) plans is a concern. A Rural Planning Act will fill the gaps since Regional Planning is of a high strategic level.
- Establishing a support structure for Sound Land Use Planning in Suriname will yield (quickest) results if a well-structured, participatory approach is followed, including intensive cooperation between District Authorities and key-land use planning Ministries, led by RGB. This procedural approach may yield success if (at least the contours of) a macro level spatial development framework is agreed. Development of a vision, involving all stakeholder groups, is of prime importance
- There is a global appeal to stress a participatory approach and preferably rights-based inclusion of the opinion of people. District Authorities tend to be institutionally ignored with regard to development. This could enhance a biased approach.
- RGB is well-suited to play the role of coordinating agency for LUP as there are synergies between this task and the other tasks assigned to the Ministry. However, RGB is currently not equipped to perform this function.
- At present, the strongest function of RGB to coordinate sound land use planning (both conceptual, procedural and in practice) is their land allocation task on a country-wide scale. This task needs to be substantively reinforced to strengthen RGB institutionally.
- The role of RGB should preferable be coordinating and not taking over all the LUP functions of other agencies. There are synergies between OW's urban planning function and its other tasks. Moreover, the District Administrations should play a more prominent role in the preparation of regional and local area plans both urban and non-urbanized areas.

¹⁰³ Based on the State Order Task Description of the Ministries

- In order to clarify the respective LUP jurisdictions of OW and other agencies, it is essential to ensure proper definitions of "urban" as well as of "settlements". The actual descriptions are outdated. This will avoid confusion and will enhance synergies.
- There exists a big lack of spatial data / information. This persistent bottleneck to land use planning must be addressed urgently. Capacity Building of relevant staff in contemporary survey and data analysis methods, including remote sensing and GIS-applications, is the foundation to (sound) land use planning (practice).
- Conditions for LUP to be fulfilled in the Coastal Plain could generally be quite different from those in the Interior, for instance in terms of watershed management.
- LUP in CARICOM countries has failed for a number of reasons. These vary from the failure to share LUP functions with local administrations, weak legal provisions concerning public participation in the LUP process, generally resulting in an out-dated "top-down" LUP process and lack of "ownership" of LUP by the wider community, the lack of a link between approved LUP's and public sector development programmes; failure to periodically review and revise of LUP resulting in obsolete and abandoned plans and the lack of political support.

8.1.2 General Recommendations

- Since different agencies are performing different LUP functions, it is necessary to develop a coordination structure to synchronize land use planning activities
- All relevant Ministries, agencies and institutions should be involved in the process to develop an improved and harmonized framework.
- Cooperative efforts between all the ministries with Land use planning responsibilities should be intensified in support of establishing a strong institutional structure for sound land use planning.
- The aim should be to eliminate task overlaps, reduce administrative inefficiencies, duplications and conflicting situations.
- Capacity Building in rural-regional land use planning and data gathering methods should be increased to facilitate embedding of sound land use planning institutionally in Suriname.

- It is not realistic to expect a macro level, national scale based land use planning vision if (sound) land use planning is not practiced; there is an urgent need to develop such a vision with support of RGB and other partners to create awareness and to build political will. It is essential that LUP is being supported on both political as well as policy level.

8.1.3 Specific recommendations

- The 1973 Planning Act should be amended or replaced by a comprehensive new piece of planning legislation that meets contemporary needs. If necessary, amendments should be made to the Urban Planning Act to harmonize the two laws.
- The new LUP legislation should facilitate an internally consistent hierarchy of LUP to be prepared. All of the LUP need not be prepared by the same agency, but the lead agency must have the power to coordinate the system of LUP.
- RGB should administer the new Planning Act. This would mean some adjustment in the mission of NPO and the legislation governing that agency.
- Steps should be taken to build up capacity for LUP at relevant ministries. For example, a former explorative survey has revealed that 6 professionals with a diverse expertise are required to strengthen RGB.
- The recently promulgated State Order to expand the urban areas (*woongebieden*) as referred to under the Urban Planning Act involves a substantive superimposition on rural spatial planning. The artificially created "planning ribbons" factually cross-cut through and mainly consist of often still untouched natural lands with variable economic potential from a natural resource perspective. By this decision other land uses (active and passive) are thus ignored. This may result in unnecessary, institutional and organizational competitive claims by different ministries. This extension needs urgent substantive clarification to prevent institutional disharmonies.
- Urgent technical assistance should be sought to start up the preparations of an overarching national spatial plan, as was recently done in Guyana under the EU-funded Guyana Development of Land Use Planning Project.
- An automated GIS- and Remote Sensing-based Early Warning System, is a requisite for swift decision-making using a likewise automated Decision Support System for proper land allocation.

- RGB and other relevant institutions are recommended to improve and intensify relations with District Authorities within the foreseen SLUP-context. District and Resort Councils can play a significant role to make the participatory approach operational.
- RGB lacks the legal tools to carry out its spatial planning mandate and needs legislation for this purpose. The implementation of such legislation should be based on institutional collaboration.

Based on the lessons learned from the difficult history of LUP in other CARICOM countries, the following recommendations can be made:

- It is essential that political support for LUP is gained.
- If technical assistance is granted to engage consultants to prepare LUPs, arrangements must be made for a transfer of skills to local counterparts in order to build up the capacity for LUP in the agency/agencies responsible for LUP
- The legal framework for LUP must be clear and robust and the legislation should be kept up to date with changes in circumstances and best planning practice
- All LUPs in the hierarchy (national, regional/district and local area LUPs) need not be prepared by the same agency provided that the prescriptions of LUPs lower in the hierarchy are consistent with those higher in the hierarchy
- LUP functions should be placed in an agency/agencies where there are synergies with other functions (other functions should complement - not conflict with - LUP functions);
- Personnel responsible for preparing LUPs should be dedicated to this task (not have competing responsibilities);
- Public participation in the LUP process is key to community ownership of and compliance with LUPs;
- Public sector investments must conform to the LUP and be subject to the same controls (including EIA requirements) as private sector initiatives.

Annex 1 Overview Gaps and Constraints Land Use Planning Laws in Suriname

Provisions	Constraints/ Gaps	Points for improvement
Planning Act		
Article 1 defines “minister” as the minister responsible for national and regional planning.	<p><i>At the time of promulgation of this act, it was the Minister of Opbouw. Over time, national and regional planning was administered by different ministries.</i></p> <p><i>As the Ministry of Finance was tasked in 2010 with national planning and the integration of sectoral and regional plans and programs in the national plan, one would assume that this Ministry is responsible for the preparation of this plan. However, based on the revised Statutes, the NPO falls now under the Cabinet of the Vice President. In addition, the Ministry of Spatial planning, Land and Forest Management has the responsibility for spatial planning.</i></p> <p><i>The abovementioned creates great uncertainty about the responsibilities and position in the field of development and spatial planning.</i></p>	<i>A clear distinction has to be made with regards to the responsibilities of ministries and institutions.</i>
Articles 2-5 regarding national and regional development policy	<i>Although the intention of the Act was to provide for spatial planning as part of development planning, in practice, 5 year socio-economic plans are being prepared which are not of the nature contemplated by</i>	<i>Capacity building and streamlining of all ministries, departments and institutions which contribute to the development plans.</i>

Provisions	Constraints/ Gaps	Points for improvement
	<p><i>the Act. The NPO is responsible for support to the Vice President in developing the Draft Multi Annual Plan¹⁰⁴.</i></p> <p><i>The NPO is also in charge for developing regional plans starting per district. They have finalized the regional plan for Brokopondo in 2013 and are currently preparing the rest of the districts. The NPO is depending on the contribution of the sector ministries and regional government. As the contribution is not always optimal, the staff of the NPO have to rely on their own insights to fill in the gaps (Buursink 2002).</i></p>	
<p>Article 6 stipulates that one or more maps picturing the projected physical development should be part of the Development Plan</p>	<p><i>This confirms the statement in the Explanatory Memorandum of the Act, that spatial planning of land use is central within this Act. This line is followed for national and regional development planning. However, in practice these maps have not been included in the National Development Plans. With the realization of the Ministry of RGB, uncertainty is created about responsibilities related to spatial planning.</i></p>	<p><i>A clear distinction between spatial planning responsibilities between the NPO and the Ministry of RGB has to be made.</i></p>
<p>Article 7 stipulates that areas that can be designated on the maps of an National and/or Regional Development Programme</p>	<p><i>The act requires that every development plan should be accompanied by a map. However, in practice, the development plans¹⁰⁵ are rarely accompanied by a map.</i></p> <p><i>It is stipulated that maps of the Development Plan may show development areas, living areas as well as special management areas. But a methodology on how to appoint a specific area is lacking. Appointment of a development area depends on the sector f.e. agriculture, mining or forestry. Some of the sectors do have a system (Forest Management Act and the Nature Conservation Act) to appoint</i></p>	<p><i>Designation of areas for land use planning purposes is essential. It is recommended that also the methodology (procedures and criteria) for designating an area is also regulated.</i></p>

¹⁰⁴ Statutes of the NPO, SW.58870/N-11387.

¹⁰⁵ Although 8 maps were prepared for the OP 2012-2016, they were not included.

Provisions	Constraints/ Gaps	Points for improvement
	<p><i>certain areas but falls short, while others don't even have a system (Industrial areas). In addition, the act also lacks a methodology to integrate the sectors.</i></p> <p><i>Because the Planning Act is not operational, another legal option (by ministerial order) has been used to designate areas in the coastal zone as special management areas. It is noteworthy mentioning that this construction of a ministerial order is weak and has its shortcomings¹⁰⁶.</i></p>	
<p>Articles 11-13 regarding the binding nature of development programmes</p>	<p><i>The development programmes¹⁰⁷ are binding for administrative and official government bodies. The Minister is authorized to suspend measures and plans that are not in accordance with the development plan, after having heard the Plan Coordination Commission and the Planning Council. As these bodies have never functioned, the Minister was not able to hear these bodies.</i></p> <p><i>In reality, development plans don't have a binding effect. It is stated in the OP 2012-2016 that it aims to be more of a policy directive; Development views are organized and placed systematically in relation to one another.</i></p>	
<p>Section IV (articles 19-21) provides stipulations for the planning organs</p>	<p><i>The Planning Organs are the NPO (Planbureau), the Plan Coordination Commission (Plancoördinatiecommissie) and the Planning Council (Planraad) and the Independent Community (Zelfstandigegemeenschappen). With the decentralization of administration, the Districts Board has taken the function of these independent communities. The Plan coordination Commission and the Planning Council are non-existent which seriously hampers effective implementation of the Planning Act.</i></p>	<p><i>Formalise the planning organs in order to operationalize the act.</i></p>
Urban Planning Act		

¹⁰⁶ This will be further elaborated when describing the Ministerial Orders on the establishment of the MUMA's.

¹⁰⁷ The word program instead of plan was chosen in in the Planning Act, because a plan indicates more a shorter time deliverable of a program. A program provides a framework for planning and implementing the government and private sector initiatives as well from the citizens.

Provisions	Constraints/ Gaps	Points for improvement
Section I provides for definitions	<p><u>Settlement area</u> is an area designated by State Order that consists of one or more residential areas, with the area involved in the future development around it.</p> <p><u>Structure plan</u> is a plan with the future arrangement of the land according to its urban destination or land use category.</p> <p>A <u>zoning plan</u> is a plan in which the complete or part of the structure plan is elaborated in more detail.</p>	NA.
Section II regulates the development of structure plans	<p><i>This section outlines a procedure for determination of structure plans. These plans can only be applied for residential areas. As a consequence thereof, the Urban Planning Act is only applicable on residential areas and thereby excluding the non-urban areas.</i></p> <p><i>The Ministry designs the structure plans and consults the Inter departmental Coordination commission for Development Planning. This Commission is currently non-existent which hampers effective implementation of the act.</i></p> <p><i>Another gap is that the act does not provide for a methodology on the how to arrive at a structure plan, nor are there criteria and indicators to design such a plan. It is left to the Ministry of OW to decide on a procedure and design.</i></p> <p><i>Although the act provides for a 30 days for the public to comment on the plan, a public enquiry procedure to guarantee public participation is missing.</i></p>	<p><i>Evaluate the scope of the Urban Planning Act.</i></p> <p><i>Review and update the State Order containing the Rules of Order of the Coordination Committee for Development Planning. It is recommended to include the NPO, the Ministries of RO, RGB and NH.</i></p> <p><i>Review and update the Urban Planning Act taking into consideration criteria and indicators to designate residential areas and structure plans, and public participation procedure.</i></p> <p><i>Review and update the Plan to guarantee public participation through a transparent procedure.</i></p>
Section III regulates the zoning plans	<p><i>This section outlines a procedure for determination of zoning plans. Zoning plans are determined by State Order. As in the case with the provisions regulating the structure plans there are also no criteria or indicators to designate a zoning plan, nor a methodology on how to</i></p>	<p><i>Review and update the Urban Planning Act taking into consideration criteria and indicators to develop a zoning plan, and public participation procedure.</i></p>

Provisions	Constraints/ Gaps	Points for improvement
	<i>develop a zoning plan. Zoning plans do not exist in the absence of structure plans. The same counts for Commission which currently is absent.</i>	
Section IV regulates parceling plans	<i>This section outlines the procedure for parceling or subdivision of land. Parceling can only take place in accordance with a Parceling Plan that is approved by the Minister and is limited to residential areas and areas for which a structure plan has been approved. A major gap in the legislation is that regulatory/planning approval of parceling is not mandatory in a non-urban area.</i>	Evaluate the scope of the Urban Planning Act .
Act on Regional Bodies		
Articles 51 and 52	<i>These articles provide for procedures for planning in the districts. The Ressor Plans should be considered when the Districts Plans are being formulated. The Ressor Council can request to be represented at the deliberations for the formulation of the district plan by the District Council. The districts plans that are annually developed must fit within the Multi-Annual Development Plan. They have more a socio-economic nature. The District Councils are authorized to be represented at the deliberations for the formulation of the national plans by the Development Body for National Development. They will then have an advisory vote.</i>	Explore the possibilities to add spatial planning responsibilities to the ressort and district councils, particularly in areas not covered by the Urban Planning Act.

Annex 2 Overview of Related Land Management Legislation

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
<p>Constitution of the republic of Suriname</p>	<p><i>The Constitution stipulates that property of both the public and individuals fulfils a “social function” and that everybody has the right of undisturbed joy of his or her property, except for limits set by law. This does not relates to the right to own property but to enjoy existing property.</i></p>	<p><i>In executing spatial planning functions, the State must take into consideration the “enjoyment” right.</i></p>
	<p><i>The Constitution further stipulates that the natural resources are property of the State and need to be allocated for economic, social and cultural development. The State has the indefeasible right to fully occupy the natural resources to convert to the economic, social and cultural development of Suriname.</i></p> <p><i>The Constitution also provide the foundation for sustainable development through the social objectives of the State, which are aimed at:</i></p> <ul style="list-style-type: none"> <i>i. the identification of the potentialities for development of the own natural environment and the enlarging of the capacities to ever more expand those potentialities and;</i> <i>ii. the creation and stimulation of conditions necessary for the protection of nature and the maintenance of the ecological balance.</i> 	<p><i>Although the provision regarding natural resources provides for the State to plan and control land use of the whole territory, it has been challenged by the Indigenous and Maroon communities. Indigenous and maroon tribal communities feel that this provision curtails their right (Ellen Rose Kambel, 1999). Their fundamental rights are completely invisible in the Constitution. They see this provision as a major obstacle for adequate protection of their rights as it gives control to the State on all land and natural resources that have been managed and used by these tribal community for hundreds of years.</i></p>
	<p><i>The foundation for the national development plan is laid in the Constitution. It is stipulated that a development plan shall be determined by law, taking into consideration the national and socioeconomic goals of the State.</i></p>	<p><i>The Constitution is very brief on the development plan.</i></p>

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
Civil Code (G.B. 1860 no. 4 as lastly amended by S.B. 2004 no. 25.)	<i>Art. 576 stipulates that lands and immovable goods that are unmanaged or have no owner belong to the State. The Act stipulates that in the public interest, the property may be expropriated against prior compensation.</i>	<i>The Government lacks an adequate overview of unmanaged land.</i>
L-1 Decree on Principles of Land Policy (S.B. 1982 no. 10 as lastly amended by S.B. 2003 no. 8).	<i>Every Surinamese has the right to a piece of domain land. In principle, this right rests with the people who cultivate or inhabit the land. The rights of the indigenous and maroons need to be respected when issuing domain land, except when it is contrary to public interest. Public interest includes the execution of a project under an approved development plan.</i>	<i>This policy created a lot of conflicts with indigenous and maroon tribes. The restriction related to the public interest is so broad that the indigenous and maroon rights will always be overruled by any action that the State deems in the public interest or any project that the government has included in a development plan (Ellen-Rose Kambel, 1999 p. 94).</i>
	<i>The acquirer of the land is obliged to use the land in accordance with the purpose for which has been issued. It is also prohibited to change the destination/land use without prior approval of the State.</i>	
	<i>The Ministry of RGB is responsible for implementation of this Decree.</i>	<i>Monitoring of compliance is very weak which seriously hampers efficient land management and results in speculation with domain land.</i>
Decree on the Issuance of Domain land(S.B 1982 no. 11 as lastly amended by S.B. 2003 no. 7.)	<i>The Minister rejects requests for domain land, if the destination is in conflict with regional development, structure and zoning plans.</i>	<i>To date formal structure and zoning plans are lacking.</i>
	<i>When the request is with regards to domain land in a district, the minister requests advice from the District Commissioner. The Minister may, with the consent of the Government, transfer domain land into private owned land. By State Order detailed rules will issued about those who are eligible for</i>	<i>It is stated by certain District Commissioners¹⁰⁸ that it is rational to issue land within the districts by the District Commissariats, because they know the circumstances with regards to land availability and land use in their district better</i>

¹⁰⁸ Personal Communications with Mr. R. Jiawan, DC of Saramacca (d.d. July 4, 2014), mr. W. Joeloem Singh, DC of Nickerie and Mr. A. Ramdani, DC of Coronie (d.d. July 21, 2014)

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
	<i>transfer of their land from domain land into ownership and on the lands which may be transferred.</i>	<i>than the RGB office in Paramaribo. Another challenge is that the DC's provide non-binding advice.</i>
	<i>The land lessee (grondhuurder) is allowed to use the land for the purpose that it has been issued taking into consideration mining legislation. Excavations of shells, sand, gravel, clay or other similar materials is permitted insofar as they are used for personal use on that specific piece of land.</i>	<i>Although the law is clear with regards to mining on own land there is a lack of enforcement in this regard, which lead to unsustainable mining practices. Good coordination between the Ministry of RGB and NH is missing on this piece.</i>
	<i>Without explicit approval from the State, the right to lease land cannot be divided or used for other purposes.</i>	<i>Procedure time for the approval by the Minister is not stipulated, which leaves it to the discretion of the minister. The lack of a legal basis for appeal and an arbitrage institute weakens the position of the applicant.</i>
	<p><i>The land lessee has the right to cut down the trees and if used for other than their own use, a fee will be charged. Also for wood processing, exploitation of balata and other non-timber forest products, a fee needs to be paid when it is not intended for their own use.</i></p> <p><i>It is also stipulated that the lessee is obliged to keep waters, creeks and roads that pass through his land, open for others to pass. He is also obliged to cede land to the state for the construction of public roads or channels with the associated structures and utilities.</i></p>	<i>Although charging of fees for commercial harvesting on land issued under land lease title is regulated, forest management on these land is not yet regulated and therefore not controlled.</i>
	<i>The Minister is authorized to exchange a piece of domain land with right holders. Also for the exchanged land, the right holder must take into account any existing or future national-regional development programs, structural plans, and zoning plans.</i>	<i>The lack of structure and zoning plans creates uncertainty for the Government as well as right holders.</i>

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
L-3 Decree on the Legal Position of Land issued before 1 July, 1982(S.B. 1982 no. 12)	<i>This decree regulates the position of land issued before July 1, 1982. Title rights to domain land issued before July 1, 1982 will retain their legal status, but when expired rights will not be extended other than under the new regime of July 1, 1982. Owners of title rights on domain land have the option to convert titles issued before 1982 to title rights, which exists after July 1, 1982.</i>	
L-4 Decree on the Land Chamber(S.B. 1982 no. 17)	<i>This Decree established a Land Chamber. The main task of this agency is to resolve conflicts related to land use and land rights. An important task of the Land Chamber is to protect the interests of private land users. The Land Chamber can also hear disputes related to the execution of land rights and is empowered with conflict resolution authority.</i>	<i>Although this chamber is not functioning, it is recommended that its authority and operations be reviewed. The chamber should be installed.</i>
L-5 Decree Land Development Corporation for Suriname (S.B. 1982 no. 17)	<i>Regards the establishment of a Land Development Corporation for Suriname (Grondverzetbedrijf Suriname) that is able to make land available in a quick and efficient manner. This is to prevent stagnation in the issuance of lands for cultivation and industries.</i>	<i>The Land Development Corporation has never functioned. RGB remains responsible for the issuance of domain land, but its procedures are neither transparent nor efficient. As a result of which hundreds of lawsuits have been filed against the Ministry.</i>
L-6 Decree (S.B. 1982 no. 19)	<i>Provides for regulations regarding squatting. According to this law, squatters can be penalized with imprisonment or a fine. With their sentencing, the judge may order that the land should be vacated.</i>	
Forest Management Act(S.B. 1992 no. 80)	<i>This act provides a framework for forest management, exploitation, and related sector activities to guarantee sustainable utilization of forest resources.</i>	<i>The act provides for designation of different types of areas, which should be in conformity with national and regional plans.</i>

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
	<p><i>It contains provisions with regard to zoning; for specific purposes the forest can be designated as Conversion forest, Permanent forest, and forest to be temporarily maintained, pending a decision to its destination.</i></p>	<p><i>To date no national plans have been developed with accompanying maps indicating development areas or special management areas.</i></p>
	<p><i>Permanent forest can be categorized in permanent production, protected forest or special protected forest¹⁰⁹.It is stipulated that the designation of forest areas should not be in conflict with an existing of future national or regional development programme.</i></p>	<p><i>Just recently, in 2013 only 2 areas have been designated as special protected forest. The lack of zoning of the forest areas hampers proper land use planning.</i></p>
	<p><i>The Act also stipulates that in consultation with the Minister of RO, certain areas will be designated as community forest.</i></p>	<p><i>The opinions with regards to community forests are still divided; there are still communities who feel that they do not have to apply for community forests as it regards land that traditionally belongs to them. As long as the land rights issues are pending, the discussion remains.</i></p>
	<p><i>An important provision in the law is article 7 regarding conversion forest. It is stated that all government institutions that have the intention to make use of conversion forests for non- forestry purposes should notify the minister on the purpose to use the forest and the start time. The consideration of this is that the use of the land for non-forestry purposes will take place on the basis of long-term land use plans (bodembestemmingsplannen) and therefor will not present any objections by the aforementioned government institutions.</i></p>	<p><i>Although the law provides an opportunity for alignment in the use of conversion forest, it is not being implemented as such, due to the lack of the so-called long term land use plans and the lack of coordination amongst the different government departments and institutions. This causes a lot of conflicts; according to SBB¹¹⁰, it often happens that forest concession holders are being confronted with mining right holders for the same area or that land lease rights are being issued for or overlapping with community forests.</i></p>

¹⁰⁹ In 2013, two areas, namely Mapane and Kabalebo were designated as special protected forest.

¹¹⁰ Personal communication with F. Narsingh- Abdul (Sub-Director Legal Affairs) and D. Lemen (Director Forest Management) from SBB, dd.31 July 2014

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
		<p><i>The lack of a legal requirement for an Environmental and Social Impact Assessment (ESIA) is a major shortcoming in the act.</i></p>
<p>Nature Conservation Act (G.B. 1954 no. 26 as lastly amended by S.B. 1992 no. 80.)</p>	<p><i>This act provides provisions for the protection and maintenance of nature monuments. The President may allocate lands and waters, which belong to the state domain as nature reserves. To be designated as a nature reserve, the area must meet certain requirements such as alternating natural and scenic beauty and or presence of a scientific or culturally significant flora, fauna and geological objects. Several domain lands were designated as nature reserves through State orders. These State orders are mainly a geographical indication of the Nature reserves. They also leave the possibility open for exploration activities for the potential of exploitation of natural resources open.</i></p>	<p><i>The current act does not make reference to any national and regional plans to be considered when designating nature conservation areas.</i></p> <p><i>In addition, a public consultation procedure to facilitate the designation of nature reserve is missing. In several places the establishment as well as the implementation of nature reserves has led to conflicts with local communities who in most cases were not consulted about the plan or even if they were, the nature reserve was established despite their objections (Ellen-Rose Kambel, 1999, p. 110).</i></p>
<p>Ministerial Orders to designate Bigi Pan, North Coronie, North Saramacca and North Commewijne/Marowijne as Multiple Use Management Areas(ARS 2002 no.94, S.B. 2002 no. 87, S.B. 2002 no. 88, S.B. , ARS 2002 no. 94)</p>	<p><i>Under these ministerial orders, 4 areas in the coastal zone of Suriname have been designated as multiple use management areas. These areas are at the disposal of the Ministry of RGB for rational management.</i></p>	<p><i>Although the State order assigned the Ministry of RGB to manage the respective MUMA's, the reality is that different ministries have legal responsibilities (mandates given by law) within these areas. F.e the ministries of Fisheries, Natural resources, Regional Development, Public Works, etc. Hierarchically speaking, the laws of a higher rank than the Ministerial Order which could lead to competence problems.</i></p> <p><i>The ministerial order does not refer to any national or regional plan and it is therefore assumed that these have not been taken into consideration when demarcating the management area.</i></p> <p><i>The legal basis for the management plans is absent at the moment. From a legal standpoint, there is no difference in management of these areas compared to other areas.</i></p>

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
	<p><i>Land that has been issued before the promulgation of these Ministerial orders are excluded from the management area. General management of these areas rest with the Head of the Forest Service (LBB). The geographical boundaries of the MUMA's are provided on a map attached to the Ministerial Order. Management plans of these areas have been prepared but have no legal status.</i></p>	<p><i>Since land that has been issued before the promulgation of these orders is excluded, another bottleneck is being created for enforcement. It will be difficult for the enforcement authorities to make a distinction in MUMA and non-MUMA areas, as only the outer boundaries are defined.</i></p>
<p>Ministerial Order “ Guidelines for land issuance in the estuarine management areas (S.B. 2005 no. 16)</p>	<p><i>This Ministerial Order provides for guidelines for the issuance and use of domain land in the estuarine management areas. The order indicates which areas within the management areas should not be issued by the government. It is further stated that a strip of 500 meters on both sides of the rivers and a strip of 200 meters on both sides of creeks is reserved for protection forest or conversion forest.</i></p> <p><i>The order specifically states that the Head of the State Lands Records (Dienst der Domeinen) should send all requests for land in the estuarine area for advice to the Head of LBB (Nature Conservation Division).</i></p> <p><i>A deviation of these guideline is possible in special circumstances. However, only after the Heads of LBB, the Department of Ground Inspection, the State Lands Records and the Districts Commissioner have been heard.</i></p>	<p><i>The ministerial order does not refer to any national or regional plan and it is therefore assumed that these have not been taken into consideration when identifying land which is not available for issuance.</i></p> <p><i>In practice, not all relevant authorities are aware of this Ministerial Order.</i></p> <p><i>It is not clear whether the restrictions only apply on issuance of domain land or also on forest and mining concessions. Forest and mining concessions can have major impacts on estuarine areas.</i></p>
<p>Mining Decree(S.B 1986 no. 28 as lastly amended by S.B. 1997 no. 44)</p>	<p><i>This law authorizes the Minister of Natural Resources to issue permits for reconnaissance, exploration, and exploitation of minerals. It stipulates that all minerals in and above the ground, including territorial sea, are property of the State.</i></p>	<p><i>The Mining Decree does not require for an ESIA for mining projects nor does it provide environmental requirements.</i></p>

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
	<p><i>Article 20 provides stipulations for the reservation of land. It is stipulated that by State order, areas may be reserved for a certain period with respect to certain minerals:</i></p> <ul style="list-style-type: none"> <i>a. in the public interest;</i> <i>b. for the granting of mining rights under special conditions.</i> <p><i>In accordance with the Mining Decree, gradual granting of mining rights is taken place. First time with the right of reconnaissance, then exploration and ultimately exploitation. The maximum size of the respective rights gradually decreases from 200.000 ha to 40.000 and finally to 10.000 ha. At each renewal of the mining rights a certain portion of their land will be divested. If all holders of mining rights to comply with their obligation to divest 25% of the exploration area, an average thousands of acres of land becomes free, and sometimes even more than a hundred thousand acres. If this is not done, there will be no free areas for small-scale mining¹¹¹.</i></p>	
	<p><i>In the application for an exploitation right, the applicant should include a plan to re-use the mined out land.</i></p>	<p><i>The absence of zoning plans makes it difficult to develop a plan to re-use the area. If the concession holder is not sure about the ultimate destination of the mined- out land.</i></p>
	<p><i>The Act also stipulates that upon the termination of the mining right, the holder will take the necessary steps in order to respect public safety, conserve the deposit, rehabilitate the area and protect the environment. He will do this to the satisfaction of the Minister of Natural Resources. In case the holder fails to comply with this provision, the State can seek</i></p>	<p><i>On the one hand this article enables the Government to request the companies to rehabilitate the mined out area. On the other hand, the phrase “ to the satisfaction of the Minister” creates a loophole for not rehabilitating in accordance with international standards. No criteria are mentioned for the condition to which</i></p>

¹¹¹ WWF, Sabi yu Mijwet: Rechten en Plichten van de Kleinmijnbouwers, p. 9, April 2013, Paramaribo

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
	<p><i>authorization of the judge to have those measures taken at the expenses of the holder of the right.</i></p> <p><i>The building materials and forest resources in the concession area may be used for personal use. Authorization is required for commercial use.</i></p> <p><i>It is also prohibited to carry out agricultural activities for commercial purposes without a license from the relevant authorities.</i></p> <p><i>It is stipulated that Small Scale Mining can only be exercised in areas designated by Ministerial order which will be published in the Official Gazette. Areas where mining rights have already been granted, will not be designated for small scale mining.</i></p>	<p><i>needs to be rehabilitated, which means that it is fully depending on the competence and sincerity of a minister.</i></p> <p><i>Enforcement of the provision regarding commercial use of forest resources and building materials and commercial agricultural activities requires a structured collaboration with sector ministries/agencies (Mining, Forestry and Agriculture). However, this collaboration is done on an occasional basis, when conflicts arise.</i></p> <p><i>This provision allows for zoning, but was not being implemented until December 2012, when for the first time four areas were designated by order by the Minister of NH. This designation regarded an area of 4641 hectares west of New Coffee Camp, two large areas of 4784 ha and 5647 south of Brownsweg and one large area 5667 ha east of Langatabiki. It is worth mentioning that this zoning has been done to solve a conflict and not for planning purposes.</i></p>
<p>Decree E8B, regarding issuance of license to State Oil for research and exploitation of hydrocarbons (S.B. 1981 no. 59)</p>	<p><i>This Decree provides authorization to Staatsolie to do research and exploitation of hydrocarbons in a defined concession area which is part of the Onshore area and has a surface of approximately 12.200 km².It is stipulated that in case Staatsolie needs land for its petroleum operations, the State will make domain land available, free of charge. After termination of the activities this land will return to the domain of the state.</i></p> <p><i>Right holders and third parties are obliged to permit in and on the land, within the concession area, the search and extraction of hydrocarbons by the concession holder if they are notified on time and against previously assured compensation. When</i></p>	<p>NA</p>

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
	<p><i>third parties land is required, the state will take measures facilitate Staatsolie to acquire these lands or make domain land available.</i></p> <p><i>It is stipulated that all operations shall be carried out according most modern international techniques and methods in general accustomed to in the oil industry and in accordance with “good oilfield practice”; the company is responsible for a safe discharge of water and waste oil</i></p>	
<p>Petroleum Act(S.B. 1991 no. 7, as most recently amended by S.B. 2001 no. 58)</p>	<p><i>This act provides detailed rules for detection and exploitation of hydrocarbon. It is stipulated that the petroleum activities should be carried out in such a way, that negative impacts on the environment and natural resources are prevented.</i></p> <p><i>Like in the decree E-8, it is stipulated that in case Staatsolie needs land for its petroleum operations, the State will make domain land available, free of charge. After termination of the activities this land will return to the domain of the state. When third parties land is required, the state will take measures facilitate Staatsolie to acquire these lands or make domain land available.</i></p> <p><i>Staatsolie has the authority to enter into petroleum agreements with third parties. In these petroleum agreements, provisions will be made for the periodic shedding of portions of land to which the contract relates. The rationale behind this is to prevent that the contractor hold parts of the concession for too long, without being carried out activities. By releasing the areas Staatsolie can possibly interest other contractors.</i></p>	

Act/Regulation	Interrelationship with land use planning	Gaps /Challenges
Hindrance Act(G.B.1930 no. 64 as lastly amended by S.B. 2001 no. 63)	<p><i>This act lays down provisions for the establishment of facilities which may cause danger, damage or nuisance. The district commissioner is responsible for the issuance of a permit.</i></p> <p><i>By State order streets, neighbourhoods, towns and cities can be designated where facilities are not allowed to be established or where no hindrance permit is required. This designation should not be in conflict with a zoning plan under the Urban Planning Act. Although this is a very old law, it provides for zoning possibilities.</i></p>	<p><i>While neighbourhoods are under constant stress of unwanted businesses, the Government has not made use of the provision to regulate undesired establishments through a State Order. In fact, the Districts Commissioners use their discretionary powers to determine which facilities are allowed in a certain area or street.</i></p> <p><i>Each District Commissioner has its own internal instructions of admitting or prohibiting certain facilities in certain areas or streets. This allows for arbitrary and inconsistent policy implementation.</i></p>
Act for Land Registration and Land Information System (GLIS) (S.B 2009 no. 149)	<p><i>The Management Institute for land registration and Land Information system (GLIS) is established by this Act. The Act further regulates the Public registers, land administration, registration of ships and aircrafts. GLIS is also responsible for the maintenance of the national geodetic reference system</i></p>	

Annex 3 Roadmap for Sound Land Use Planning in Suriname

OVERALL GOAL				
To support the sub-directorate of Spatial Planning of the Ministry of RGB, in close collaboration with other Ministries and agencies of the GOS in sound land use planning (SLUP) , using a participatory multi-stakeholder approach				
Policy Area 1: Legal Framework				
Goal: To have in place an improved and integrated legal framework for LUP				
Objectives	Activities	Status	Priority	Potential Partners
1. Comprehensive evaluation of existing LUP Laws undertaken	Analyse existing LUP and related legislation	Largely done		
	Identify necessary amendments and repeals to harmonize existing LUP laws and give RGB its jurisdiction as lead agency for LUP	Started	High	OW; RO; NPO; LVV; NH, OW
2. Improved/updated LUP legislation in force	Draft new legislation to support coordination of LUP processes and performance of LUP functions by RGB		High	
	Enact and implement new LUP legislation		Medium	
Policy Area 2: Institutional Framework				
Goal: To strengthen the institutional capacity of RGB and other relevant agencies of GOS for LUP				
Objectives	Activities	Status	Priority	Potential Partners
1. Capabilities of existing LUP institutions evaluated	Identify existing agencies with LUP functions	Done		
	Identify gaps in existing institutional mandates/capabilities with respect to LUP	Largely Done		
	Assess if/how LUP functions are being and can be performed	Largely done	High	
	Recommend measures for closer coordination of LUP processes by RGB and cooperation with other LUP institutions	Partly identified	High	
2. Skill sets for performance of LUP task by RGB identified	Assess existing staff capabilities within RGB	Done		
	Identify short & long term staffing needs of RGB LUP Unit	Done		
3. Required personnel for LUP Unit in RGB procured	Hire expert LUP consultants (Medium Term)		High	Dept. Cooperation; Min. of Foreign Affairs
	Hire local experts to staff RGB LUP Unit		High	

	Ensure skills transfer to local experts in RGB LUP Unit		Medium	
4. Adequate financial and material resources for LUP secured	Ensure adequate provision is made by GOS for start-up of LUP Unit in RGB (e.g. in National Budget)		High	Finance; Development Cooperation; Min. of Foreign Affairs
	Identify other potential sources of short and long term financial support for LUP activities		High	Finance Development Cooperation; Min. of Foreign Affairs
	Obtain necessary office space, equipment and supplies, including computer hardware and software, vehicles, etc.	Partly done	High	
5. Strategy to grow and maintain capacity of LUP Unit developed	Develop succession strategy to retain and increase LUP staff		Medium	
	Develop LUP and related land information training opportunities within Suriname	Implicitly done	High	AdeKUS; NATIN; In-Service Training; Development Cooperation; Min. of Foreign Affairs
	Identify relevant LUP training opportunities abroad		High	See above
Policy Area 3: Data, Information & Research				
Goal: To obtain adequate data & information for LUP				
Objectives	Activities	Status	Priority	Potential Partners
1. Existing information made available for LUP	Identify existing primary data sources	Done		
	Collect, collate and analyse existing information	Partly done	High	GLIS; OW; RO; NPO; ABS; NH; LVV; HI; Finance
2. Data & information gaps identified	List data and information requirements for LUP	Done	High	
	Identify needed data not yet available from primary and secondary sources		High	

3. Additional new LUP surveys and research carried out	Design surveys / research projects to obtain new and additional data	Nature of surveys indicated	High	idem
	Implement surveys / research projects in collaboration with partners		High	idem
Policy Area 4: Sound LUP Practice and Procedures				
Goal: to achieve best practice with respect to methods and procedures for LUP and the contents of LUPs				
Objectives	Activities	Status	Priority	Potential Partners
1. LUP policy goals and objectives identified	Distil LUP goals and objectives from existing national and sector policies for sustainable development of Suriname		High	NPO; Finance; OW; RO; NH; LVV; HI; etc.
	Identify relevant principles from international best practice	Done	High	See above
	Verify LUP goals & objectives		High	See above
2. Potential LU options systematically assessed	Identify potential alternative LU strategies	Done	High	See above
	Evaluate LU alternatives with respect to the achievement of LUP policy goals, etc.		High	See above
	Carry out Strategic Environmental Assessment of LU alternatives		High	See above
3. National, regional and local level LUPs prepared and approved	Select optimal national LU strategy and formulate synoptic national level LU proposals		High	See above
	Detail national LU proposals in a hierarchy of LUPs		Medium	See above
	Get formal approval of LUPs in accordance with legislation		Low	See above/Nat. Assembly
	Publish and otherwise publicize approved LUPs		Medium	
	Continuously review and periodically revise LUPs		Low	See above
4. Multi-stakeholder LUP process utilized	Identify and consult institutional stakeholders	Partly done	High	
	Identify and consult other interest groups	Partly done	High	
	Develop communication strategies for public participation		High	
	Engage in wide public participation process		High	
Policy Area 5: Public Information, Education and Awareness				
Goal: To raise and maintain public awareness of and political support for LUP				
Objectives	Activities	Status	Priority	Potential Partners
1. Public support for LUP mobilized	Develop and implement a general public information, education and awareness campaign using different types of media		High	LVV / NPO / NH / Sozavo

				/RO -- District Offices
	Identify catalysts for attitudinal changes and implement strategies to reach particular target groups (including stakeholder workshops)		High	LVV / NPO / Sozavo/RO-- District Offices
2. Support for LUP within GOS enhanced	Involve other governmental organizations in the public information, education and awareness process		Medium	OW; RO; NPO; NH; LVV; HI; GLIS; AdeKUS;
	Lobby policy makers and leaders of GOS to support LUP		High	Members National Assembly / Commissions

Annex 5 List of Person Consulted

No.	Name	Institution / Organization	Function
1	Mr. R. Kadirbaks	Ministry of RGB	Sub Director Spatial Planning
2	Mr. V. Lakhisaran Mr. S. Panka Mr. R. Somopawiro Mr. M. Djojodikromo Mrs. S. Svensson Mrs. S. Crabbe	SBB	Directory Policy advisor Directory Policy officer Director Research & Development Sr. Officer, Focal Point Suriname ONFi project Sub Director Research & Development
2	Ms. L. Krishnadath	Ministry of OW	Head of the Sub-Directorate Spatial Planning
3	Mr. J. Bouterse	NPO	Sub Director Spatial Planning and Environment
4.	Ms. F. Narsingh-Abdul	SBB	Sub Director Legal Affairs
5	Mr. D. Lemen	SBB	Director Forest Management
6	Mr. N Johanns	Land use planner	in the capacity of former Surinamese counterpart of the Dutch lawyer (Mr. Vink), responsible for drafting both the Planning Act and Urban Planning Act
7	Mrs. J. Graanoogst	MI-GLIS staff member	GLIS-database updating, correcting, Public Relations

Questionnaire Response

No.	Name	Institution / Organization	Function
1	Mrs. Monsels, S. Mr. Esajas, G.	SPS / NPO	Policy advisor Environment
2	Mr. Kranthoven, Max Mr. Vrede, Adilio	SoZaVo	Directoraat Volkshuisvesting
3	Mrs. H. Aroma Mrs. N. Plet	ATM	Directoraat Milieu
4.	Mr. Sotong Patrick	RO	Onderdirectoraat Ontwikkeling Binnenland Dorpsontwikkeling sectie gemeenschapsbossen.
5	Mrs. Karmen Kromoreso	LVV	Onderdirectoraat Planning en Ontwikkeling

6	Mrs. Saskia Chote Mrs. Bibi Hassan	OW	Directoraat Openbaar Groen / Beleidsunit
7	Mrs. Simone Haridat	HI	

Visited Districts including filled out Questionnaires

No.	Districts Commissariats	Names	Functions
1	Paramaribo Noord-Oost	Mr. M. Kasto Mr. C. van Varsseveld	DC Bestuursopzichter
2	Paramaribo Zuid-West	Mr. M. Nerkus	DC
3	Saramacca	Mr. R. Jiawan Mr. M. Mangalsing	DC District Secretary
4	Nickerie	Mr. W. Joeloemsing	DC
5	Coronie	Mr. A. Ramdani Mr. R. Esajas	DC District Secretary
6	Commewijne	Mr. R. Pollack Mrs. S. Kabeli Mr. G. Habiboela Mr. B. Wazirali Mr. W. Peneux Mr. C. Ritveld	DC Adjunct District Secretary General Advisor Bestuursopzichter onder-Bestuursopzichter Bestuursopzichter
7	Para	Mr. G. Bolwerk-- Mr. G. Jubitana, Mr. P. Draaibar	District Secretary Bestuursopzichter Bestuursopzichter
8	Brokopondo	Mrs. I. Pinas Mrs. L. Tijdmeter Mrs. S. Stedenburg Mr. W. Schalwijk	DC Secretary DC Head BIC Policy advisor
9	Wanica	Mrs. R. Samsedin Mrs. N. Gangaram Panday Mr. A. Kali	DC District Secretary District Secretary

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