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**Country Reports**

Country report of Suriname\*\*

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Country report of Suriname

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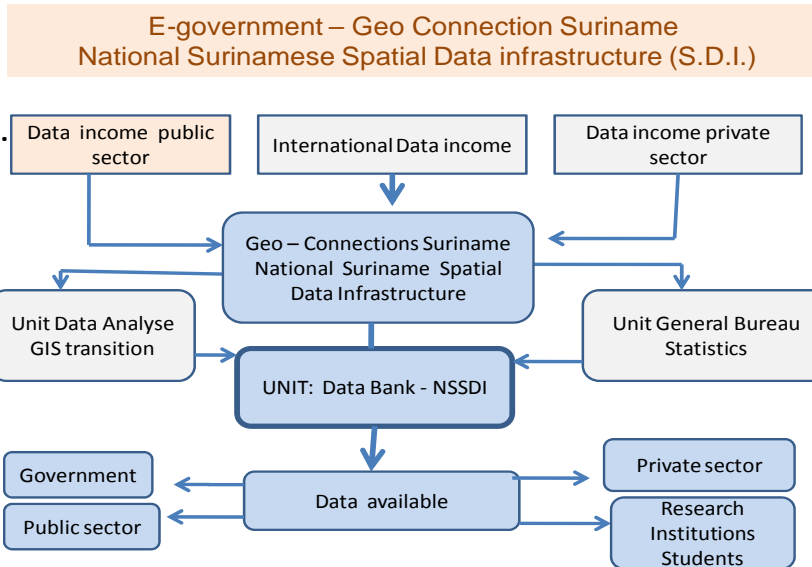
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## **Introduction**

Suriname participates since 2009 (formerly in 1986) active in the UNGEGN , SDI , GGIM and UN Spider in Zwitserland . Participations in conferences aims , capacity building and institutional strengthening. This report provides an overview of the status of the Spatial Data Infrastructure of Suriname , status of the Geodesy System of Suriname ( the Global Geospatial Information Management) climate change related disasters in Suriname and the Standardization of the Geographical Names of Suriname for the UNGEGN .

### **1.Start National Surinamese Spatial Data Infrastructure as a Bridge Between the Society and Modern Digital Technolgy .**

The proposal is made to Country the Director of the UNDP in Suriname ( march 2013) in what way the project: Start National Spatial Data Infrastructure as a Bridge Between the Surinamese Society and Modern Digital Technolgy can be supported. This project is the result of the Ninth Regional Carthographic Conferences for the America's in New – York 10 – 14 August 2009. At this Conference I was on behalf of the Ministry of Education, the representative of Suriname and a model of the Spatial Data Infrastructure for Suriname was presented . The proposal is done to the UNDP in Suriname to support this project in cooperation with the UN Spatial Data Infrastructure and the General Bureau Of Statistics in Suriname . The design of this institute should ensured the coördination by a national advice council, a council for subsystems and a theme council. The start of an N.S.S.D.I. or geo-Connection Suriname, has to be established legally though the parliament of Suriname.The model of the NSSDI report was sent to the vice president of Suriname, General Bureau of Statistics and Ministry of Interior Affairs. There are two possibilities for the implementation of this Institute: 1. Set up a new institute, facility of the Geo-Connections Suriname. 2. Transformation of the General Bureau of Statistics (ABS ) in Suriname to the National Suriname Spatial Data Infrastructure. See the model below.



## 2. Status of Geodesy System of Suriname .

### The Geodetic Framework of Suriname.

Research was carried out in ( 2012) under stakeholders engaged in the Geodesy Systems of Suriname: geodetics services of the government , the Maritime Authority Suriname (MAS) and the Grondregistratie and Land information System (GLIS). The information from these institutions was processed in the UN Statistics - Global Geospatial Information Management and presented at the second conference " High Forum Global Geospatial Information Management " in Qatar from 4 to 6 February 2013.

### 2.1.The Grondregistratie and Land Information System (GLIS).

#### 2.1.1Origin of the GLIS project

Improvement of fundamental groundregistration in Suriname is already in a few decades a topic of discussion.The first plans of this topic went only about the introduction of a modern cadastre system in Suriname. Over the years the actual introduction of a modern cadastre system was not realized. This is due to the general situation of the fragmented government ground and land services ( Geodesy, land Inspection) that activities related in one way or

another with ground, so outdated that no longer can be spoken of only setting up a modern cadastre system. The ground and land Services Office and Geodesy are integrated in the new Institute, the Landregistration and Land Information System (GLIS).

The Landregistration and Land Information System (GLIS) , which was defined in 1996 by a group consisting of Surinamese and Dutch experts conducted by the Dutch Kadaster, had the target for the introduction of a modern land registration system and land registry system.

In March 2003, a joint committerings decision "Project GLIS-Kadaster" signed by the Minister of

Planning and Development Cooperation (RGOB) and the Ambassador of Netherlands to run the GLIS project. This project is coordinated under the Ministry of Spatial planning, land and Forest Management (formerly Ministry of Natural Resources).

### **2.1.2. The GLIS project organisation.**

At the GLIS project, there are three entities responsible for the overall implementation of the plan :

- The Minister of Spatial Planning, land and Forest Management (formerly natural resources), the originator of the GLIS project.
- The Landregistration and Land Information System Project Management Unit (PMU-GLIS), responsible for the realization of the GLIS project.
- The consultative body, charged with the guidance and counselling services of the PMU-GLIS.

### **2.1.3. Vision of the PMU-GLIS .**

- the information will be the source of spatial information of the GLIS (for all users: government, business and citizens).
- There is a growing need for structured and more spatial information: will be develop.
- There is a system of quickly and a habituation to spatial planning: will be develop.
- that the basic issue on a guided and controlled way shall come to pass, what will contribute to a manageable price of land, poverty combating and solving the housing shortage in the short and long term, aimed at sustainable development.

The vision of the PMU-GLIS means that :

- 1.the GLIS project will run successful .
2. the restructuring process of the inefficient labors, link with social provision of experts as an example for the National Public Reform Program.
3. the spatial information will be available to everyone, everywhere and constantly.

#### **2.1.4.Application National Geodetic Reference System.**

The technical application continuation and completion of the GLIS includes several parts:

##### **A1-Data Collection**

The Data collection includes the continuation and completion of the collection of existing map material in Paramaribo and the other districts, processing of this map material by the Surveying Offices and building the GLIS file.

##### **A2-Orthophotographs**

This component involves completing the orthophotographs for the eastern area of Suriname.

##### **A3-National Geodetic Reference System**

Monitoring and troubleshooting of the Continuously Operating Reference Stations (CORS), the Global Positioning System (GPS) network that is used for Suriname.

##### **A4-Design GLIS – ICT infrastructure.**

Within this component is worked to Design technical ICT infrastructure and operating system GLIS, consisting of system protocols and network attributes.

#### **3.The Maritime Authority Suriname (MAS).**

The Maritime Authority Suriname (MAS) is the organization which oversees the observance of legal requirements of the shipping. The MAS guarantees a safe and efficient passage of sea-going vessels to and from Suriname on the basis of internationally accepted standards, rules and treaties ratified by Suriname. The MAS strives to be the best Maritime Authority of the region in the Caribbean.

The maritime authority Suriname (MAS) plays an ever greater role nationally and internationally and is of great importance for the economy of Suriname. Developments in the world constantly set higher requirements for safe, secure and environmentally friendly waterways and shipping.

### **3.1. Services of the Maritime Authority Suriname (MAS).**

The Maritime Authority Suriname specializes in performing various services such as:

1. Hydrographic surveys according to International Hydrographic Organization (IHO) standards (SP 44). This includes bathymetry, object detection, sound velocity measurement, flow velocity and flow direction measurements;
2. Planning, placement, and maintenance of fairway markers in accordance with monitors International Hydrographic Organization (IHO standards).
3. The marking or signalling equipment of the waterways (to accompany the shipping traffic in the safe and correct direction);
4. Silt density measurements. To meet the international requirements, the MAS well-trained employees and a multifunctional hydrographic ship classified by Lloyd's register

To guarantee safe and efficient passage of sea-going vessels to and from Suriname on the basis of internationally accepted standards and rules, and in accordance with the treaties ratified by Suriname.

### **3.2. Objective of the Maritime Authority Suriname**

The MAS has as objective, a Mission Statement :

The Mission Statement of the Maritime Authority Suriname: Assuring safe secure and efficiently or is shipping on clean waterways in an customer oriented way.

### **3.3. Geodetic systems of the Maritime Authority Suriname.**

#### **3.3.1. Hydrography and management.**

The Hydrography Department and Fairway Management is responsible for monitoring and the depths mapping of all Surinamese rivers and their estuaries, insofar as this is important for shipping. It collects data from different rivers and tide it is pursuing further depth measurements. During a depth measurement are also visual tide measurement performed. The data is processed in a tide gauge table.

#### **3.3.2. Hydrography and Fairway.**



Positions and sludge densities are also on the rivers. The data is used for, inter alia, the manufacture of depth maps and tide tables. These cards must have a full, accurate, legible and reliable image of the entire region that they display. The uses of the WGS 84 system an international Reference System for the provision of hydrographic GPS Satellite measurements of the fairway and in front of the coast. The geo-data is used for the production of depth maps for shipping.

### **3.3.3 Hydrography Channel Management .**

The task of the Sub-Department Hydrography and hydrographic surveys of the Channel Management is run periodically in the rivers that provide access to the ports. That is to say, the mapping of these rivers and indicate the route with the greatest depth (fairway). By a tidal monitoring network provides automatic registration of tidal movement. Sludge density measurement is carried out with an on-board computer system the RS232 and the PDS 1000 software Densi Tune.

### **3.3.4 Gathering and processing of depth measurements.**

On the basis of bathymetry data are provided to the pilots for safe ships guidance . The data are also important for updating of hydrographic maps for the improvement of navigational charts. Depth measurements using an echo sounder. The positions of this instrument are determined using a Real Time Kinematic system (RTK), that is connected to the on-board computer. This hydrographic instruments are on-board of a Multipurpose ship.

### **3.3.5. Nautical Planning Development.**

#### **De Suriname River Dredging Project**

The purpose of the Suriname River Dredging Project, abbreviated SRDP, to realize a fairway with such depth, where ships can sail in an economically sound manner. It is mainly the shipping that keep the depth of the Suriname River fairway. But ships with greater depth can because of the limited depth of the fairway not fully loaded the ports along the Suriname river. As a result, economic consequences for the shipping companies. In addition, alternatives, such as the unload in ports outside Suriname, very attractive. In order to

determine the feasibility of the project are several studies carried out: a technical; an environmental and social effects; a Legal and a financial-economic concept.

### **3.3.6. The Corentyne River Dredging Project, CRDP.**

As well as the SRDP, the CRDP will need to create the conditions to the shipping in the Corentyne River to promote economically responsible manner. The route covers the mouth of the Corentyne River to Apoera in the south.

## **4. Climate change and sea level rise.**

Suriname will not escape the disastrous consequences of climate change. The Maritime Authority Suriname wants a contribution in collecting hydrographic data in connection with climate change and sea level rise. The cooperation within a climate model is possible with the Meteorological Service of Suriname, the Water-flow Engineering Service, and the University of Suriname.

### **4.1. Climate change-related disasters in Suriname ( UN Spider Zwislerland).**

Suriname is not saved in the short and long term for the danger of disasters as a result of climate change. The last few decades, there are already more than 30 local tornadoes been emissions nationwide, frequent floods in the coastal plain and the hinterland, the overflowing of rivers and erosion of the coastal plain. Suriname state according to the statistics of the UNDP, on the list of the ten vulnerable countries with a low coastal plain that is threatened by sea-level rise in this century.

There is huge demand for information in the society about the prevention and assistance after a tornado with a large-scale size. The media plays an important role but much information turns out not to be correct and is under discussion. In this paper is further gone in on the themes: danger, risk, vulnerability and prevention against disasters, management of natural disasters or society and a climate model. The recent (5) heavy storms emissions ( in June 2012) is the result of a depression on the Atlantic Sea in the north coast of Suriname. In May 2012. In May 2012, the country was hit by flooding as a result of the overflowing of the rivers and flooding to the coastal plain by sea-level rise. The tribal society on the banks of the rivers

had to be brought in to shelters . farmers in the coastal plan have suffered damage to their crops.

#### **4.2. Effect and protection of buildings against tornado`s .**

The tornado exerts a force on all planes emissions sucks what it encounters. Vulnerable are high trees, electric wiring and zinc plates roof hood. A big risk forms the roof hood of dwellings without ventilation in the attic, causing a air pressure difference arises (within and outside the loft) and this is very easily snatched. A daytime fast hot and zincplates is in the loft provides a low air pressure that is vulnerable for the `s tornado emissions. Within the loft creates a counter pressure causing the tornado roof hood construction and the zinc plates are left pressure. The construction of a zinc roof plates is now under discussion by frequent tornado`s emissions: one will eventually have about switching to other construction materials including trapezoidal roofing sheets or roofing tiles that are solid and no air pressure difference criated. The best prevention to homes and buildings to protect against emissions is a well-built house tornado`s recistent is reinforced concrete, with ventilation in the attic, strong enough to withstand the fierce wind and protection of the solid roof with belt anchors.

#### **4.3. Closing doors and windows for Tornado`s.**

The criation of an air pressure difference within aware homes and buildings, by closing all windows and doors during wind gust, increases the risk of jumping part of glas walls windows and doors. Best prevention is to keep everything open air to minimize differential pressure inside and outside.

#### **4.4. Design of emergency shelters**

A emegency shelter to save the vulnerable society of Suriname does not exist Interior protection is not free of the risk of the suction power of the storm, fire by shorting emissions, collapses and falling objects. In tornado risk Suriname , storm shelters are needed as emergency aid centres.

#### **4.5. Establisment of emergency fund**

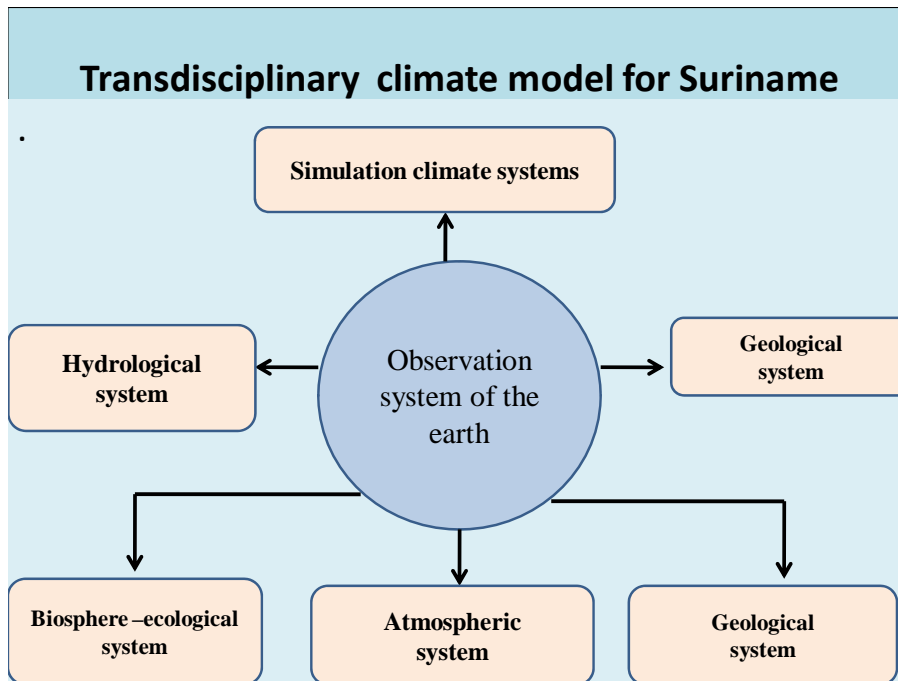
The establishment of an emergency fund for compensation of the damage caused by the natural violence, will alleviate the suffering of victims in the short term. A sustainable

solution is the adjustment of the fire insurance policy, in which the clause should be included to cover the damage resulting from a natural disaster.

#### **5.6.Climate model for management of disasters.**

In a world where states seek to increase the awareness of policy makers, public representatives and the public of the risk of natural disasters, are advanced technologies and a climate model , important mechanisms for the management of climate change disasters. The starting point in controlling climate-related disasters must structurally based on the short-term risk, vulnerability and prevention of the society.

For measuring and mapping of extreme phenomena of climate change, will be the establishment of a "Model climate Institute Suriname" a structural contribution to long-term management of climate-related natural disasters. This Institute will have a transdisciplinary function. In transdisciplinary research involves creating an environment in which people from different worlds-also non-academic-shaping mutual relationships and signification. It's going to be a researchers, policymakers, advisors and possibly other relevant parties with different knowledge, experience and skills that work intensively o.a. meteorologists, climatologists, ecologists, biologists, geographers, hydrologists, farmers, in order to ensure long-term mitigation and adaptation of the phenomena of climate change. the schedule below.



The Model will be marketed in a Climate Institute Suriname under "Control Panel Room", that use will be made of advanced modern technology , information communication technology, the geographic information system (GIS maps), The Global Position System (GPS satellite connections) and Remote Sense, as important mechanisms for management of natural disasters due to climate change, in cooperation with a network of aid workers.

#### **4.7.Educational awareness programme on climate change.**

##### **Education awarnes program to adaptation and mitigation on climate change.**

Since 2008 the Ministry of Education implemented an powerpoint educational program in aware information on the secondary and high school level on the theme "the threat of the earth by disasters are we prepared? The program consists of a PowerPoint slideshow about the greenhouse effect, climate change, sea level rise, extreme weather phenomena, sustainable (green) energy etc. and how students can make a contribution in order to adapt themselves to the effects of mitigation of climate change in the future. This program was also presented to relevant institutes of other ministries.

#### **5.Standardization of Geographical Names.**

A challenge is the standardization of geographical names-this means the consistent writing forms of toponyms and its application to national and international level :that is now being worked out.

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