Promoting participatory ICTs for adding value to traditional knowledge in climate change adaptation, advocacy and policy processes in the Caribbean

Introductory and Planning Workshop

Blenheim Sheep Multiplication and Research Project,
Windward Road, Mt. St. George, Tobago
September 25th 2012

1. Introduction

The Caribbean Natural Resources Institute (CANARI), the Technical Centre for Agricultural and Rural Cooperation (CTA) and the University of the West Indies (UWI), St. Augustine are implementing a project to use participatory three dimensional modelling (P3DM) as a tool to incorporate and recognize local and traditional knowledge and values into decision making about climate change adaptation. The project is receiving additional support from the United Nations Development Programme Global Environment Facility Small Grants Programme (UNDPO GEF SGP) and The Nature Conservancy (TNC). It is being implemented in partnership with the Tobago House of Assembly (THA).

A pilot P3DM exercise, combined with a training of trainers, was scheduled to take place on the island of Tobago in October 2012 to share and combine traditional and other forms of knowledge to identify the risks from climate change and extreme climate events and to recommend the adaptation policies and actions required.

This Introductory and Planning Workshop was part of the planning phase for the P3DM exercise to contribute to mobilisation of informants and drafting of a legend for the model.

2. Participants

There were twelve participants comprising eight technical officers from local government agencies and four representatives from civil society. The participant list is in Appendix 1.

3. Objectives

The objectives of the workshop were to:

- introduce the project to participants;
- enhance the understanding of participants about climate change and its impacts on natural resources and natural resource-based livelihoods;
- introduce key concepts in participatory three-dimensional modelling;
- develop a legend for the P3DM exercise; and
- select a name for the exercise in Tobago.

4. Method

Methods used to facilitate the workshop included an ice breaker, brain storming, lectures and probing questions to facilitate discussion. The workshop agenda is provided in Appendix 2 and the presentations in Appendix 3.

5. Findings

5.1 Legend

Participants brain stormed and produced an extensive listing of areas, lines and points that they believed would be important information needed in decision making about climate change in Tobago. This listing was then discussed and the final proposed listing is presented in Appendix 4. This would serve as a draft legend for the wider group of informants to build on during the model building exercise.

5.2 Naming the exercise

A title for the exercise was proposed to participants and a discussion was facilitated about the elements to be included in the title. These included:

- Heritage of Tobago
- Conserving/ sustaining resources
- Beauty of Tobago
- Inheritance for the next generation

After some discussion participants decided on the following title "She becomes more beautiful: Capturing the essence of Tobago today for a greater tomorrow."

6. Conclusion

All participants found the workshop useful and most indicated that the workshop helped to bring more clarity to their roles and the desired outcomes for the P3DM activity. The workshop was useful in further mobilising informants, strengthening buy in and contributing to clarifying objectives of the overall project.

Appendix 1- Participant list

NAME	ORGANISATION	JOB TITLE	ADDRESS	TEL #	FAX#	EMAIL ADDRESS
1. Darren Henry	Department of Natural Resources and the Environment (DNRE)	Forrester I	Botanic Station, Scarborough, Tobago	660-2079		darren_tours@yahoo.com
2. Cherece Haywood	TEMA	GIS specialist	Fairfield Complex, Bacolet, Tobago	660-7489	660-7686	cherecew@gmail.com
3. Howard Robin	DNRE	Env. Officer II	Montessori Drive, Glen Road, Tobago	778-5514		hwrdrobin@gmail.com
4. Darren Daly	DNRE	Env. Officer II	Montessori Drive, Glen Road, Tobago	774-2343		addy8862@gmail.com
5. Damika Marshall	DNRE	Env. Officer I	Montessori Drive, Glen Road, Tobago	723-5205		ddnmarshall@hotmail.com
6. Richard Hinds	DNRE	Civil/ Coastal Engineer	Montessori Drive, Glen Road, Tobago	725-4126		rhinds9@gmail.com
7. Tanya Clovis	Save Our Sea Turtles Tobago	President	Golden Grove, Buccoo	357-2862	639-8441	tanyaclovis@gmail.com
8. Gillian Stanislaus	DNRE	Env. Officer II	Montessori Drive, Glen Road, Tobago	735-4352	639-5232	mgclarke1@yahoo.co.uk
9. Brian Dyer	Tobago Hunters Group	President	Roxborough, Tobago	782-1557	660-5373	bmdyer1100@hotmail.com
10. Anthony Cordner	Fundamentals Cultural Group	Foreman	Speyside	354-6238		
11. Terrence Holmes	Department of Marine Resources and Fisheries	Extension Officer	Montessori Drive, Glen Road, Tobago	789-9758		tholmes_64@yahoo.com
12. Clement Bobb	Tobago Cocoa Farmers Association	Chairman/ President	Calder hall, Scarborough, Tobago	761-9678		cacaotovaco@gmail.com

Appendix 2 – Agenda

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OBJECTIVES

The **workshop objectives** are to:

a) introduce the project to participants;
b) enhance the understanding of participants about climate change and its impacts on natural resources and natural resource-based livelihoods;
c) introduce key concepts in participatory three-dimensional modelling;
d) develop a legend for the participatory three-dimensional modelling exercise;
e) select a name for the exercise in Tobago.

Agenda

8: 30 a.m.	Registration	
9: 00 a.m.	Opening remarks, welcome and introductions Objectives	DNRE/ CANARI
9: 30 a.m.	Overview of the project	CANARI
9: 45 a.m.	Understanding climate change and its impacts on Tobago	DNRE
10: 00 a.m.	An introduction to Good PGIS Practice (video)	
	BREAK	

11:00 a.m.	Introduction to legend making	UWI
11:30 a.m.	Legend making	UWI
12 noon	Lunch	
1:00 p.m.	Legend making continued	UWI
2:30 p.m.	Naming the exercise	CANARI
3:00 p.m.	Evaluation	CANARI
3:30 p.m.	Wrap up, next steps and close	CANARI

Appendix 3 - Presentations

Promoting participatory ICTs for adding value to traditional knowledge in climate change adaptation, advocacy and policy processes in the Caribbean

Blenheim Sheep Multiplication and Research Project

Tuesday 25th September, 2012

Welcome

- The Project team
- Participants

Name that person……..

Divide into two teams. On the blank piece of paper write five facts about yourself that will help anybody in the group identify you.

- 5 minutes

Name that person……..

- I will collect the cards
- Team members draw one card from the opposing team pile.
- Each team tries to name the person in as few clues as possible.

Name that person……..

- Five points if you guess the person on the first clue, then 4, 3, 2, 1, 0. The team with the most points wins
- When the person is chosen , the person tell the plenary what they expect from the workshop

Overview of the workshop

- Workshop objectives
- Agenda
- Ground rules

The Project

The Background

- Global context
  - Participatory development of climate change decision making recognised @
    - UNFCC convention on climate change Art. 6
    - COP 7 UNFCC
    - Cancun Adaptation Framework
    - IPCC third assessment report

Regional context

- Climate change impacts on SIDS
- Exacerbate ongoing problems associated with human development
- Responses in the region

Problem Statement

- core problem
- effect

Core problem

Development and implementation of policy to address the impacts of climate change and extreme climatic events has been largely without the effective engagement of local communities, from which useful traditional knowledge exists and among whom much of the adaptation action will need to be taken

Effect

- policy responses in the Caribbean have largely been at the general policy level, with few specific policies or plans developed to address priorities at the landscape or site level.

Effect

- Sectoral considerations or traditional knowledge have not been adequately considered, stakeholders are not effectively engaged, and there has been little on the ground action to build resilience or to “climate proof” key sectors such as tourism and agriculture.

Root problems

- Land use and development planning do not effectively involve or integrate the concerns of government, private sector/developers and local communities into decision making.

- Development and risk management efforts are fragmented and uncoordinated across sectors.
- The impacts of climate change and extreme climatic events and responses needed are poorly understood by stakeholders.

- Communities are not aware of the need for and do not feel empowered to participate in community-based planning to respond to the impacts of climate change and extreme climatic events.

- Policy makers and technocrats do not have a culture of, knowledge of relevant tools, capacity for, and experience in facilitating community-based planning to respond to the impacts of climate change and extreme climatic events.

Overall Objective

Increased engagement of stakeholders to adopt Information and Communication Technologies (ICT) to influence climate change adaptation policy processes.

Project purpose

Local and traditional knowledge and values are recognized and made more authoritative in decision making about climate change adaptation in the Caribbean region

Project Partners

- CTA
- CANARI
- UWI (with funding from UNDP GEF SGF)
- THA DAMME
- PwM

Project activities

- Building of P3DM model of Tobago

- Training of Trainers on facilitating participatory processes inclusive of participatory video
- Training in Web 2.0

Desired results

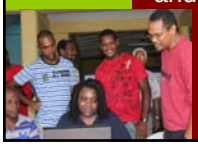
P3DM model of Tobago is completed and handed over to national stakeholders for use in policy development and decision making to build resilience to climate change and extreme climatic events in Tobago

Over 50 people are trained in complementary disciplines as follows:

- 22 trainees
- *6 practitioners and GIS technicians*
- *25 representatives from Tobago stakeholders (Web 2.0 training)*

At least 300 persons from communities and decision-makers from key sectors in Tobago have increased understanding, capacity and motivation to take joint action to build resilience to climate change and extreme climatic events

The process, and experiences made, in the use of PGIS / P3DM (and related ICTs) to value traditional knowledge in decision making about climate change adaptation, are documented and shared by a range o means including multimedia, Web 2.0 and social media.



Report, papers and policy briefs are produced and disseminated to climate change focal points, key government agencies in at least 15 countries in the Caribbean and at high level regional fora.

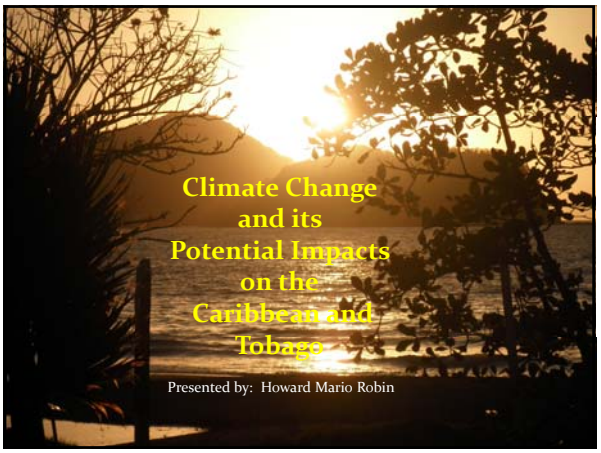
Sharing lessons learned and experiences

- Daily blogs
- 10 min participatory video
- 15-20 min videos documentary
- Policy brief
- Attend high level meetings

Thank you

Any questions??

Evaluation



Presentation Overview

1. Define climate change.
2. The science behind the concept of climate change.
3. General impact of climate change
4. Potential impact on Tobago, specifically on coral reefs and the tourism industry.

Definition of Climate Change

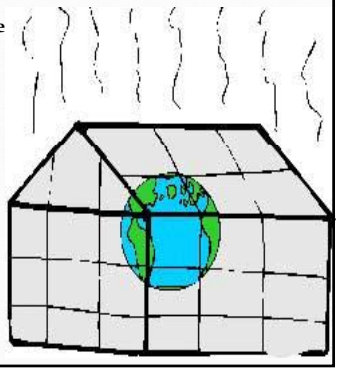
The United Nations Framework Convention on Climate Change (UNFCCC), defines 'climate change' as "**A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere** and which is in addition to **natural climate variability** observed over comparable time periods" (UNFCCC, 1992:3).

The Science

The Atmosphere

Composition of the Atmosphe

- **Carbon Dioxide (CO_2)**
- **Water Vapour(H_2O)**
- **Methane (CH_4)**
- Nitrogen(N)
- Oxygen(O)



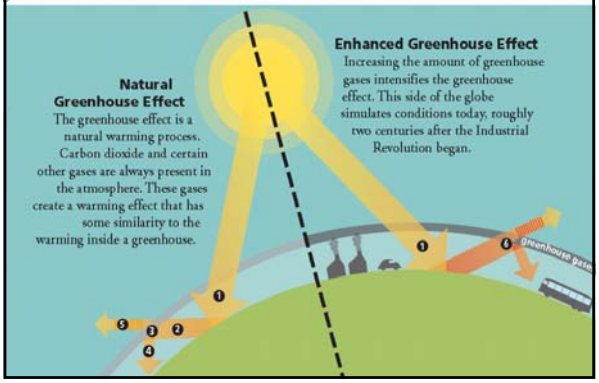
Green House Effect

Changes in the Concentration of the Major Green House Gases1(750 -2005)

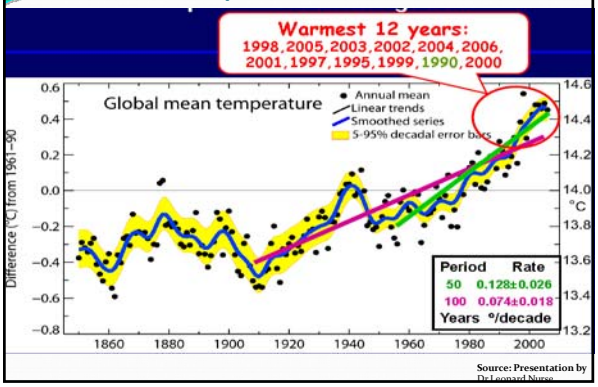
Green House Gas	1750	2005	Percentage Change	Natural and Anthropogenic Sources
Carbon Dioxide (CO_2)	278ppm	379 ppm	36	Volcanoes, Burning fossil fuels and Deforestation
Methane (CH_4)	715 ppb	1774 ppb	152	Wetlands, Natural gas & oil extraction, Cattle and landfills
Nitrous Oxide (N_2O)	270 ppb	319 ppb	18	Soils, Fertilizers and Burning of fossil fuel

Source : CAMEL, 2012. http://www.camelclimatechange.org/articles/view/153146/?topic=65884

Green House Effect



Temperature Rise

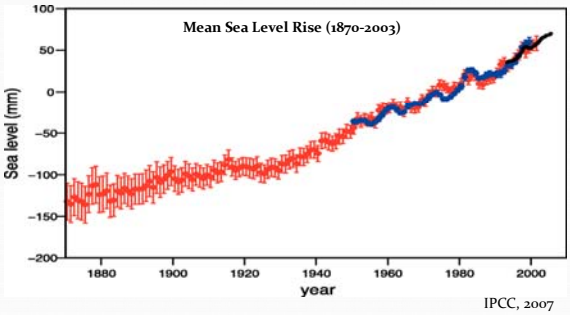


Sea Level Rise

Muir Glacier in Alaska(1941 and 2004.)

- The increase in the Earth's temperature has resulted in the melting of the polar ice caps and glaciers.
- This water eventually ends up in the sea.
- Due to the fact that hot water expands, the increase in the quantity of water coupled with its increased temperature causes global mean sea level rise.

Sea Level Rise Cont'd

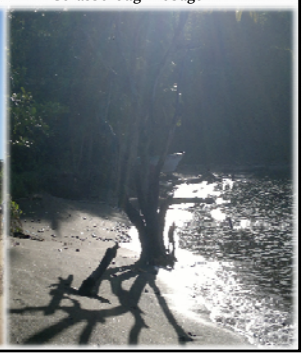


IPCC, 2007

Sea Level Rise Cont'd

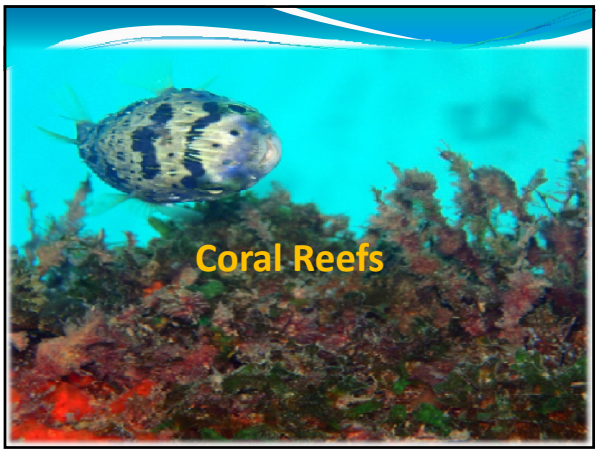
Belize

Goldsborough Tobago



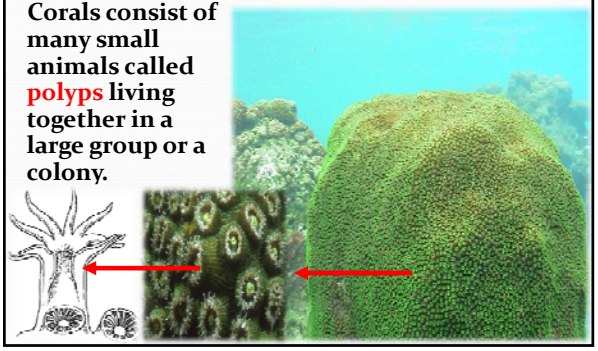
Potential Impacts of Climate Change on the Caribbean

- Agriculture
- Water Supply
- Frequency and Intensity of Droughts, Floods and Storms.
- Storms developing in lower latitudes and becoming more intense in a shorter period of time
- Health
- **Fishing Industry**
- **Coral Reef**
- **Tourism Industry**



Corals are Animals

Corals consist of many small animals called polyps living together in a large group or a colony.



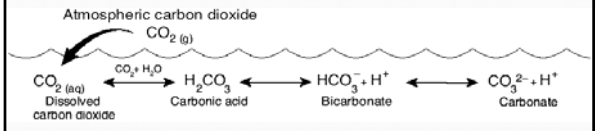
What Corals Need to Grow and Survive?

- **Temperature:** A seawater temperature of **25-31°C**
- **Light:** Corals contain algae which produced food through the process of photosynthesis. This process cannot take place in the absence of light.
- **Salinity**: between **34 and 37** parts per 1000
- **Clean water:** Water that is free of excess silt and nutrients(nitrate and phosphate).
- **Depth:** Since they need light to survive they develop at depths which are less than **70m**(They rarely grow deeper than **40m**).

Coral Bleaching

- Coral Bleaching: This occurs when corals lose the single celled algae that live within their tissue. The abrupt increase SST causes the corals to expel the algae from their tissue.
- The rapid increase of fresh water into the ecosystem from storm-generated precipitation and runoff also cause coral reef bleaching.

Reduced Calcification and Dissolution of Reef Framework



The diagram illustrates that:

1. With the rising emission and concentration of CO_2 in the atmosphere more CO_2 will be absorbed by the oceans.
2. The seawater will become more acidic .
3. There will be an increase in dissolved bicarbonate and a decrease in the available carbonate in the sea water.
4. As a result of this process it will be more difficult and energy consuming for coral animals and plants to make their shells or skeletons.

Damage to Colony Skeletons and Reef Framework

Beach littered with coral debris

Why are Coral Reefs Important for Tobago?

- Coral reefs help to generate income for Tobago
- Coral reefs are the forests of the sea
- Coral reefs help to generate food
- Coral reefs help to build beaches
- Provide a habitat for fish and other marine organism.

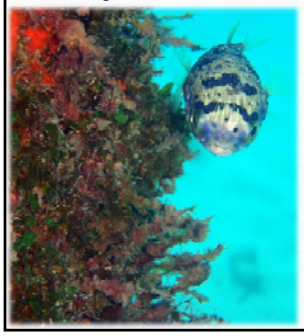
A world Without Corals

Limited\no Diving

Limited\no Snorkelling

A world Without Corals Cont'd

Significant reduction of certain species of fish



Rocky as opposed to sandy beaches

Map Legend Design

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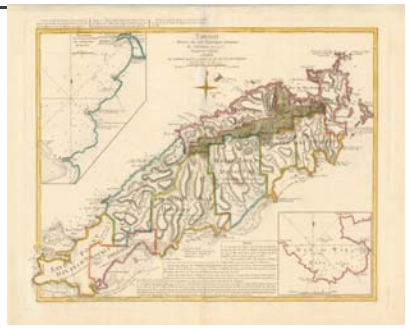
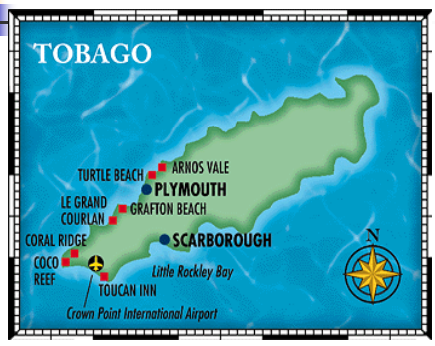
Introduction

- A map is silent without its legend.
- A legend is the foundation for dialogue in participatory mapping.
- The P3DM technique will surface "tacit" knowledge about cultural-natural landscapes – but the legend makes this available to others.

Map of Tobago



Map of Tobago



Building the Legend

- Before the mapping can be done, the legend must be compiled with local knowledge holders and culture bearers.
- Because communities are diverse; the legend needs to represent that diversity
- Local knowledge may be complex, tacit and/or ambiguous

Tacit Knowledge

- Tacit knowledge refers to local knowledge about the landscape, ecosystem, biodiversity or cultural usage but about which community members do not regularly talk.
- People may know the landscape by doing or observing; while mapping they may speak about this for the first time.

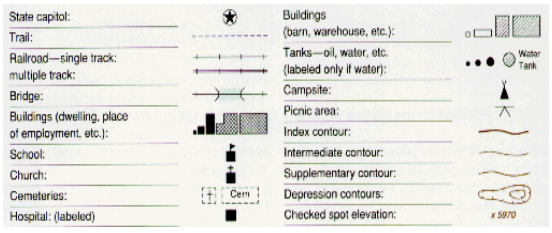
Ensuring Clarity

- Ambiguity means that a word has more than one meaning
- We need to be clear what the legend item means?

Legend making

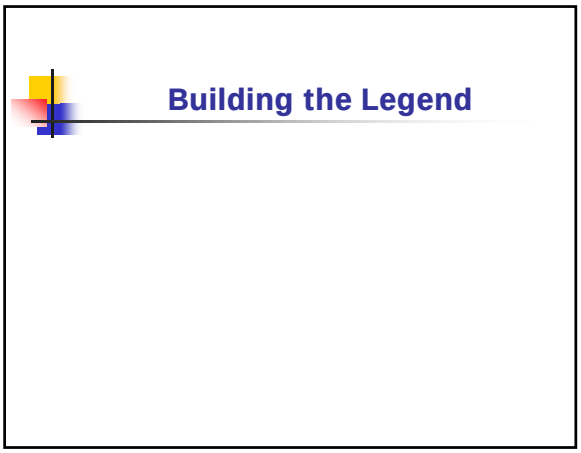
- All legend items need to be sorted into:
  - areas
  - lines
  - points
  - toponyms

Map Legends



Cultural sensitivity

- Some information should not go on a map:
  - sensitive information about endangered species
  - sacred sites or taboo areas
  - valuable resources


Building the Legend

Appendix 4 - Draft legend

Areas

- -Coral Reef
- -Fishing Grounds
  - •Fish Pots
  - •Oil
  - •Lobster
- -Dive Site
- -Seagrass/ Wetlands
- -Vegetation Cover/ Forest Cover
- -Offshore Islands
- -Farming Areas
  - •Livestock
  - •Agriculture
  - •Estates
- -Plantations (Public and Private)
- -Recreational
  - •Watersports
- -Quarry/Mining (Legal and Illegal)
- -Bathing Beaches
  - •Popular
  - •Local
- -Place Names

Lines

- -Roads
  - •Major
  - •Minor
- -Trails
- -Rivers
- -Forest Reserves
- -Marine Parks
- -Crab Catching
- -Hunting Areas
- -Submarine Cable
- -Submarine Gas Lines
- -Floods
- -Bushfires
- -Community/Town Boundaries
- -Seawall/ Coastal Defence Features
- -Landfill
- -Zones of Coastal Erosion
- -Watersheds
- -Habitats

Points

-Government Offices/ Official Residences.....
-Schools.....
-Forts/ Historical Sites.....
-Health Facilities.....
-Airport.....
-Seaport/Ports.....
-Landing Sites.....
-Jetties.....
-Waterfalls.....
-Parks.....
-Bird Sanctuary.....
-Communication Towers.....
-Fire Stations.....
-Gas Stations.....
-Police Stations.....
-Community Centres.....
-Churches/ Temples/ Mosques.....
-Post Office.....
-Emergency Response Centres.....

Points

-Holding Tanks.....
- •Water.....
- •Sewage.....
- •Fuel.....

-Shipwrecks.....
-Bridges.....
-Nesting Sites.....
-Springs.....
-Wells.....
-Recreational Facilities.....
-Hotels.....
-Industrial Park.....
-Gas Depot.....
-Offshore Facilities.....
-Archaeological Sites.....
-Commercial/Business.....
-Rumshops.....
-Transportation Hubs.....
-Markets.....
-Cemetary.....