



DRAFT WORKSHOP REPORT

GEO for Deserts First Authors' Workshop

6 to 8 September 2005, Mendoza, Argentina

DAY 1

Opening Session

The session started at 9:10 am with welcome remarks by Timo Maukonen (TM), Senior Programme Officer of the United Nations Environment Programme (UNEP), Exequiel Ezcurra (EE), Director of the Biodiversity Research Center of the San Diego National History Museum (SDNHM), and Sergio Roig Juárez, Director of *Instituto Argentino de Investigaciones de las Zonas Áridas* (IADIZA). Elena Abraham (EA) of IADIZA also spoke giving information about the institute.

Introduction of participants

Fourteen (14) participants moved to another room where the majority of the three-day workshop took place (See **Annex 1**). Among concern and interest mentioned by the participants were:

- Lack of information about soil in the draft outline
- Importance to provide on policy-making relevant information
- Necessity to produce a report with a new angle of analysis

TM mentioned that the names of the individuals who had shown interest to participate in the production of the report but could not come to Mendoza, due to visa problem or other commitments, including: Professor Wang Tao (Director General of the Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy Sciences); Dr. El-Gilani Abdelgawad (the Arab Center for Studies of Arid Zones and Dry Lands); Dr. Mark StaffordSmith (the Desert Knowledge Cooperative Research Centre, Alice Springs, Australia), and Dr. Zafar Adeel (Assistant Director of the United Nations University, the International Network on Water, Environment and Health at the McMaster University). It was decided that EA of IADIZA and Kakuko Nagatani-Yoshida (KN) of UNEP would be note takers of the workshop.

Objectives of the GEO for Deserts report and the workshop

After informing the workshop about the UNEP's effort related to land assessment, such as the FAO-UNEP Global Land Cover Network (GLCN) and the Land Degradation Assessment in Drylands (LADA), TM explained the objectives of the GEO for Deserts project as:

- To fulfil the UNEP's role in the UN General Assembly resolution A/RES/58/211 declaring year 2006 the International Year of Deserts and Desertification (IYDD). The report will be launched on 5 June 06, and to be presented again on 17 June 06 on the margins of the International Conference on Deserts and Desertification by UNESCO and UNEP/DPDL

- To provide an updated experts' view on the status and outlook on world's deserts
- To enlighten both political decision makers, interested professionals and environmentally devoted general public about the development potentials and conservation needs of these very fragile environments.

TM stressed the fact that the focus of the report was not on “desertification” but on “deserts”. It was explained that the workshop group itself was to decide what sort of product was expected. Expected outcomes of the workshop included: a revised annotated outline with names of Lead Authors and Contributing Authors; a list of reference material, data bases, case studies, images for the report chapters, and a list of proposed sites for satellite image analysis.

Main points raised during the discussion session that followed the above presentation were:

- UNCCD excludes deserts from its focus as they consider that the ecosystem can not be “desertified” further. We must separate the project's focus from the position of UNCCD. Land degradation in any ecosystem is desertification.
- Should we include hyper-arid, arid, and/or semi-arid areas? We need to define “deserts”. Our target is the area with less than 100mm/yr precipitation. Deserts as a climax ecosystem, not degraded tropical and sub-tropical ecosystems. To demystify the notion of deserts is expanding. A key message of the report could be “killing myths and generating stories”. We need to find a new angle of analysis to identify new issues.
- The project hopes to focus on a positive side of deserts. (“Proud of deserts and combating desertification” as said in Namibia). Also, we need to highlight the risks that deserts are facing such as degradation of deserts, due to urbanization and related pollution, desalinization, mineral extraction, tourism activities, etc.
- The publication should include information on trends and outlooks, which is beneficial for stressing the impacts placed on the fragile ecosystem.
- We need to consider how to package scientific information to appeal to non-scientists. Perhaps the report can contain information on early warning.
- More graphics and less text. No jargon.

Introduction and the presentation of the draft outline of the GEO for Deserts report

EE made a presentation on the concept and the draft outline of the report (mainly on the Chapter 1). The main points of the presentations as well as the discussion that took place during the session were the following:

- A red bikini of the Gaia – deserts are a part of natural ecosystem
- The basic rule – the western side of the world continents are always wetter, linked to upwelling or tidal upwelling of coastal current. Correlation between “green sea” and “brown land”.
- We also have rain shadow deserts (e.g. Tewacan Valley) that are far from the coastal zones. It is important to strike regional balance in the description of desert types in the report, as old world deserts are different from new deserts.
- Deserts are sandwiched between temperate and tropical ecosystems. Deserts expanded and contracted over millions of years, creating a huge endemism (40-80% of species). “Sky island effect” (mountains in the deserts that harbour endemism). Shield areas/deserts – Saharan and Old World Deserts. Special attention should be made to Asian deserts in Tajikistan, Mongolia, etc.
- Myth 1 – link between desertification and grazers (pasture??) feeding.

- Myth 2 – Development/cycle of desert development depends more on the southern oscillation indicators (SOI) or large-climate cycles (not necessarily “El Niño” and “La Niña”) than the nurse-plant cycle theory. Averager vs. Tracker. Much of world cultivation started from desert annuals (= Trackers). A good example is found in the Fertile Crescent in the Middle East.
- Inefficient use of water (e.g. use of underground aquifer) for producing meat. Also, pumping water from deep-well irrigation is very energy intensive (Mendoza vs. the northern Mexico). Subsidies on electricity trap agriculture in a downward spiral, as without them, the whole agricultural system in the area will collapse. Also, over-extraction of groundwater could lead to salinisation of land. Need to give more incentive for the cultivation of lower-food chain crops.
- Desalination of sea water is not economically viable with the existing technology, therefore, it leaves us only the option of reverse-osmosis of grey or semi-saline water.
- Economics of global water and deserts. Potential of water conservation and alternative energy options found/relevant for deserts.
- The report should try to provide straight/ direct messages, rather than hiding issues in scientific details.
- The relation between soil – desert formation/location is as important as the link between water-deserts.
- An overview of desert studies can make an interesting box.

Adoption of the Workshop Agenda

A revised agenda was requested to choose between an agenda with or without group sessions. The group decided to work in a plenary throughout the workshop (See **Annex 2** of this report).

Presentation on the use of satellite images and georeferenced information

Ashubindu Singh (AS) of UNEP introduced to the group to the Atlas of Global Change that was launched in June 2005. Main points of his presentation as well as discussions that took place were as follows:

- Having a good title is important.
- We must accept that scientists and policy-makers understand different languages.
- Trends information attracts policy- and decision-makers.
- Striking a regional balance important.
- We need to supply a combination of a site and a message/ issue we want to convey.
- We want a publication rich in photos and graphics that support story lines.
- The report needs a photo editor and a cartographer to start working now.
- Updating of cartography could be a good contribution of the report, but considering the time-resource constraint attached to its production, it would not be possible to do new research.
- The report should aim to be neither a compendium of desert information nor a deductive and prescriptive writing (“should not become a voice of the God”).

Chapter Review

Through a discussion on the draft outline in general as well as on specifics of chapters, the group agreed to make some major structural changes to the outline. In order to highlight the human interactions with desert ecosystem it was decided to place the chapter on “People and Deserts” immediately after the Chapter 1. Another major change agreed was to extract a sub-section in the Chapter 1 to create a new chapter on “Global environmental dynamics and desert ecosystems” (new Chapter 3). The group also discussed in length about the purpose of the chapter on “State of the World Deserts” (originally Chapter 2) and its position in the outline, and decided to place it

temporarily as Chapter 4. As for the new Chapter 6 (originally Chapter 5) on “Outlook and Options” GRID Arendal offered to help with the development of scenarios. One person per chapter was identified to be responsible for chapter specific discussions on Day 2.

DAY 2

Before entering to chapter presentations the group exchanged observations on the revised outline from Day 1. Among key points raised were:

- Chapter 3 should include information on economic benefits produced by deserts.
- The definition of desert that the report employs must be made clear at the beginning of the Chapter 1. Deserts are found at the high altitude (north Tibet, High Himalayan.). The workshop decided to limit deserts to mainly hyper-arid or arid, with some areas extending to semi-arid, mainly referring to hot deserts while noting the existence of cold deserts (parts of Greenland, Iceland, and Antarctica). However, we must remain conscious of what the public capacity of understanding deserts (= hot areas with camels and sand). No tundra would be included.
- The word “desertification” refers to an anthropogenic process of land degradation.
- Clarification of the terminology used in the report is very important. The Encyclopaedia of Deserts by Michele Mares was suggested as a common reference.
- The key message – Deserts affect everyone, and you have the right to care about deserts.
- Economist needs to be brought in to look at capital aspect of deserts, but should not forget that this is a UNEP report with focus on environmental aspect of the issue.
- It is important that to mention that resilience of deserts is very low.
- Export – Commodities case studies should be allocated among Chapters 2, 3 and 5 in coordination among the chapter authors and EE. Some repetition of information would be inevitable among these chapters and may be beneficial as the audience of the report would not read all chapters/ or in the order of chapters.
- Lead Authors of Chapter 3 and 5 to come up with a definition of “biodiversity” and its role in the development
- Even though it is common for environmental issues to be lower in governments’ priority list, there are some individuals in the same governments who are willing to listen to environmental message. This report should provide to those individuals with ammunition to fight.
- All chapters should adopt the IPCC scale of “uncertainty”
- Desert ecosystem has its own equilibrium, but it should be noted that deserts tend to have multi-equilibrium.
- Chapters 2 and 3 should use “Driving Forces” as entry point of for their analysis.
- Ecologically intelligent tourism should be promoted in the report.
- Water is not a cause of conflict, but a reason for non-conflict / agreements. Therefore, the report should try to demystify the notion of water as a cause of conflict. The focus of analysis should be on competing claims/ competition and on limitation and inequity of distribution, instead.

During the rest of Day 2 and the morning of Day 3 the group reviewed the draft outline of the report and produced the annotated outline, with assigned Lead Authors. Comments made during these discussions are summarized in **Annex 3**.

DAY 3

A list of potential sites for satellite image analysis was also produced through the chapter specific discussions (ref. **Annex 4**). Since the Landsat does not give an universal coverage and is not

presently operational, AS asked for a longer list potential areas for analysis from which suitable sites could be chosen. The group agreed to search for more sites after the workshop and contact AS directly for any change to the existing list. AS requested to be provided with a final list as soon as possible so that he could start looking for base data (e.g. Landsat, STAT, IKONOS). The group also contemplated over the use of air photos and DEM, etc. It was decided that each chapter should not have more than 2-3 satellite images (in addition to other graphics).

The group discussed the plan of the report development towards the end of the workshop. EE explained briefly about a draft ToR for Lead Authors that had been prepared using the format of SDNHM for Independent Contractor Agreement and would be sent to all chapter Lead Authors after the workshop. EE agreed to send out a ToR for chapter development, specifying the length of each chapter by the number of words, specifications for case study box, and specifications about submitting materials including images. EE requested Lead Authors to ensure that the texts flow well and limit use of bullet points. EE would be responsible for finding a photo editor as well as an editor for the report, while UNEP HQ and the Regional Office for Latin America and the Caribbean would work together to identify a designer. Lead Authors were requested to look for photos for their chapters from their private collections and to contact UNEP for help if they were not successful in locating good photos.

In order to assist the production process of the report, TM agreed to set up a WIKI site for the report-related communication and the exchange of documents. He would send the address of the site soon after. As for the number of copies to be printed, the group felt that 2,000 copies would be a reasonable size. Lead Authors requested to receive 20-50 free copies for distribution.

The group then reviewed and adopted the draft production timetable and decided to hold the meeting of Peer Review on 24-28 January 2006 in Gobabeb, Namibia (tentatively). In case that Namibia was found to be not a suitable venue for the meeting (e.g. visa complications), the group would consider other options such as San Diego (USA), Baja California (Mexico), Southern Spain, etc.

ANNEX 1

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AGENDA

GEO for Deserts First Authors' Workshop 6 to 8 September 2005, Mendoza, Argentina

DAY 1

Time	Item	Responsibility /Speaker	Room
8:30-9:00	Registration	Silvia Urbina	Latin America Room
9:00-9:30	Welcome remarks <ul style="list-style-type: none"> • UNEP • SDNHM • IADIZA 	Timo Maukonen Exequiel Ezcurra Sergio Roig Juñent/ Elena Abraham	San Guillermo Room
9:30-9:40	Move to the San Guillermo Room		
9:40-9:55	Introduction of Participants	Participants	San Guillermo Room
9:55-10:30	Overview of the UNEP “GEO for Deserts” Project and the objectives of the workshop (including Q&A)	Timo Maukonen	San Guillermo Room
10:30-10:45	Break		Garden
10:45-11:15	Discussion and adoption of the agenda	Participants	San Guillermo Room
11:15-13:30	Presentation of the concept of the GEO for Deserts report and the Chapter 1	Exequiel Ezcurra	San Guillermo Room
13:30-14:30	Lunch and Logistics announcement	Silvia Urbina	Cafeteria
14:30-15:30	Presentation on the use of satellite images and georeferenced information (including Q & A)	Ashbindu Singh	San Guillermo Room
15:30-17:45	Discussion on the concept of the GEO for Deserts report and the draft outline	Participants	San Guillermo Room

DAY 2

Time	Activity	Responsibility /Speaker	Room
9:00-9:30	General discussion on the draft outline	Participants	San Guillermo Room
9:30-10:30	Presentation on the Chapter 2 Outline	Mary Seely	San Guillermo Room
10:45-11:00	Break		Garden
11:00-13:30	Presentation on the Chapter 3 Outline	Uriel Safriel	San Guillermo Room
13:30-14:30	Lunch		Cafeteria
14:30-16:00	Presentation on the Chapter 5 Outline	Andrew Warren	San Guillermo Room
16:00-18:00	Presentation on the Chapter 6 Outline	Christian Nellemann/ Stefanie Herrmann	San Guillermo Room
20:30-	Group Dinner	Silvia Urbina	Tajamar Restaurant

DAY 3

Time	Activity	Responsibility /Speaker	Room
9:00-10:00	Review of the Chapter 6	Stefanie Herrmann	San Guillermo Room
10:00-11:00	Review of the Chapter 2	Mary Seely	San Guillermo Room
11:00-12:00	Review of the Chapter 5	Andrew Warren	San Guillermo Room
12:00-13:00	Review of the Chapter 3	Uriel Safriel	San Guillermo Room
13:00-14:20	Review of the draft list of satellite images, the production timetable and the ToR for Lead Authors	Participants	San Guillermo Room
14:20-14:30	Closing remarks <ul style="list-style-type: none"> • UNEP • SDNHM • IADIZA 	Timo Maukonen Exequiel Ezcurra Elena Abraham	San Guillermo Room
14:30-18:00	Field trip to Divisadero Largo	Participants	

ANNEX 3

Chapter 1

- This chapter should show the hydrological flow related to deserts (“Where is water and where is it going”)
- Patchiness of high productivity in deserts has fewer tropic levels – refuge from predators (5 tropic levels in deserts) – Uriel Safriel to send more information to Exequiel. Use Gary Prowler’s work.
- The information about the co-evolution of pastoralism?? and human development (early stage) should stay at the end of Chapter 1 to provide a link to Chapter 2
- The chapter should mention Quaternary Extinction of large mammals
- A case study on winter rain deserts, sky island (e.g. baby crocodile in the Northern Chad), tulips from the Central Asia, etc.

Chapter 2:

- Key message - Why the deserts matter to people
- Life supporting deserts should go into the Chapter 3
- This chapter should present success stories

Chapter 3

- “Deserts and the Planet” is the suggested title for this chapter
- This chapter highlights the relationships between deserts and non-deserts. Non-deserts affect deserts
- Anna Taigan has done a long-term monitoring of dust. The Northern Chad is the biggest source (AS will get TOM Satellite to show dust movement). Elena and Stella will send Argentinean examples of dust movement.
- Cross desert migrations must be included in the section on trade & livelihoods.
- Aquaculture may be better placed in the Chapter 5.
- Final message - Why the deserts matter to the environment? People outside of deserts are benefiting from deserts functions
- Use of the word, “non-renewable water”, is preferred over “fossil water”, even though the latter may have more impact on policy- and decision-makers.
- The first internationally recognized refuge was in a desert?

Chapter 4

- This chapter should stay on its own and as the fourth chapter of the report.
- The chapter should mention mining related pollution, reintroduction Oryx and California condor, etc.
- This chapter should show what has been done concerning the management and protection of deserts (a synthesis)
- WCMC’s map on MEA?? may be useful. The Encyclopaedia of Deserts has a map showing the world deserts that this chapter may be able to adopt from.

Chapter 5

- The underlying theme of this chapter is to present the current policies and its failures/limitations (challenges) and success/potentials (opportunities)
- It should include water policy analysis that demonstrates scarcity of water as a challenge
- Patchiness of deserts is a challenge for people living in deserts
- Variability of deserts is a challenge for development
- In some cases, transition of a desert to other land use can be an opportunity (it can relieve pressure from other ecosystems)
- The expectation of increasing the productivity in desert ecosystem is low (natural and industrial). Finding an alternative livelihood for desert inhabitants is a key to its management/conservation. The

focus of the effort should be on “adding value” by moving away from primary and promoting an establishment of a tertiary sector.

- This chapter should note the role of the UNCCD in creating the world-wide awareness
- A box on subsidies is recommended.
- Case studies on damages caused by locusts, land mines, etc.

Chapter 6

- Considering the time available for the outlook analysis (Scenarios) the chapter should make efficient use of the existing scenarios materials including: the MEA directional table; UNESCO Scenarios; glacier scenarios in IADIZA; the Tree-ring Laboratory in USA; Andrew Warren’s contact in Germany, etc.
- We must check the trends of population, poverty, etc in deserts.
- Useful data suggested were: the NPP data in Mongolia (Andrew Warren), the NPP data for over 20 yrs in the Northern China (David Dent)
- The chapter could have only two sections: scenarios and options for action
- In relation to issues related to glaciers (e.g. change in water regime) the report should identify adaptation options
- The priority energy option is that of energy self-sustenance of people in deserts, without disturbing vegetation cover (e.g. solar power, increase of wood production to reduce clearing)
- Case studies: on Dubai case study to show how oil money is used to create industries that outlive oil; on Coral Reef based tourism industry; on Mendoza (Elena Abraham); on Copiapo (UNEP/ROLAC and Guido Soto); on the Central Asia (Christian Nellemann); on the Kano City, Sub-Saharan Africa (Andrew Warren); on Australia’s unique development (Mark StaffordSmith); and on Camel, Vicuñas, and Guanaco.

ANNEX 4

Request of Satellite Image Analysis

(Some items may be better in other formats such as photos)

Location	Objective	Chapter
Gaddafi's new river	Use of desert water resources (for irrigation etc.??)	Chapter 2
Thar	Pollution, ship breaking	Chapter 2
Taklamakan	Trade development (silk road oases, Goladnuaya steppe)	Chapter 2
Saudi Arabia	Irrigation schemes (with fossil water)	Chapter 2
Lower Colorado	golf course development	Chapter 2
Las Vegas	Urbanization	Chapter 5
Saltan Sea	Chapter 2
Aral Sea	Pollution	Chapter 3
Northern Chad	Dust movement	Chapter 3
Burkina Faso	Dust movement	Chapter 3
Kuwait	Oilfield fire/ pollution	Chapter 3
South of Mendoza	Dust movement	Chapter 3
Patagonia	Algae plume	Chapter 3
Sahara	Tourism development	Chapter 5
Grand Canyon	Iconic landscape. World heritage site.	Chapter 5
Ahagger	Iconic landscape. World heritage site	Chapter 5
China	irrigation scheme, (afforestation of desert margins to stabilize moving sands???)	Chapter 5
Chile	Fog harvesting projects	Chapter 5
South of Mendoza	Oil field development and Guanaco disturbance	Chapter 5
Qanats, Iran	Chapter 5
Uluru	Chapter 5
Aswan	New Valley	Chapter 5
Syr Darya and Amu Darya	Overexploitation of rivers for irrigation and consequent shrinking and pollution of Aral Sea and its basin: economic and health impacts	Chapter 2?