

UNCTAD

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Extractive Industries and Sustainable Job Creation

**The success story of a Sudanese oil operating company:
Greater Nile Petroleum Operating Company (GNPOC)**

By

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Greater Nile Petroleum Operating Company (GNPOC)

The views expressed are those of the author and do not necessarily reflect
the views of UNCTAD.

The success story of a Sudanese Oil Operating Company;

Greater Nile Petroleum Operating Co.Ltd. (GNPOC).



Presented by: Mr. Alfatih Yousif Tamim Fartak



Cubic Globe

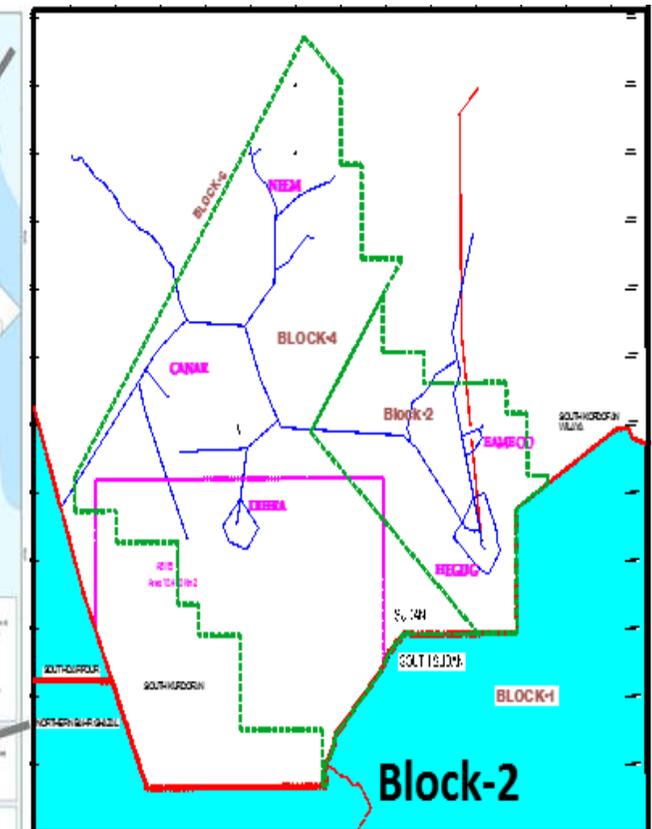
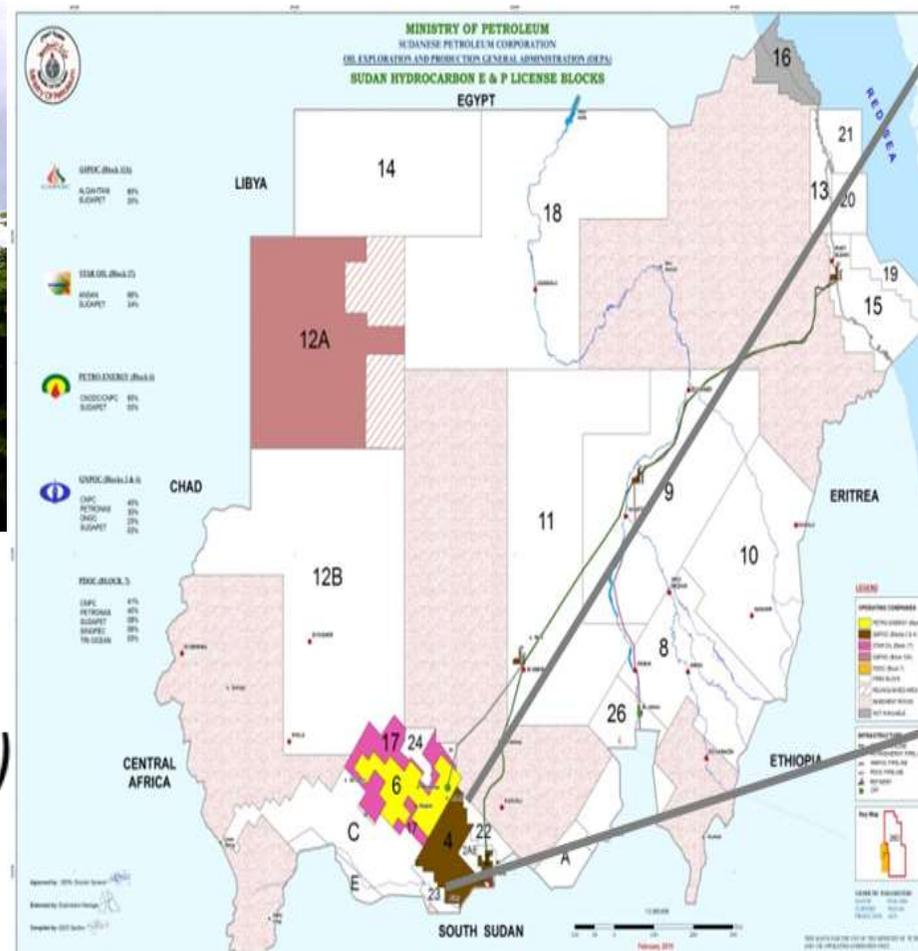
- ✓ Introduction
- ✓ Objectives
- ✓ GNPOC Chronology
- ✓ Business dimension and Technology
- ✓ HSE and Community Development
- ✓ Manpower and Training
- ✓ Challenges

- To highlights GNPOC responsible business process.
- To reflect the appreciations granted by international bodies to GNPOC on the sound HSE operation manner.
- To share GNPOC experience in oil business as a pioneer oil company in Sudan with local and regional companies .

- GNPOC was incorporated on June 18, 1997, to operate oil concession area located in south Kordofan State.
- Concession area comprises blocks 2 (2A, 2B) & 4 which are located 800 km south west from Khartoum with a total acreage of 29,893 Km². Oil extraction processes are governed by an Exploration & Production Sharing Agreement (EPSA),

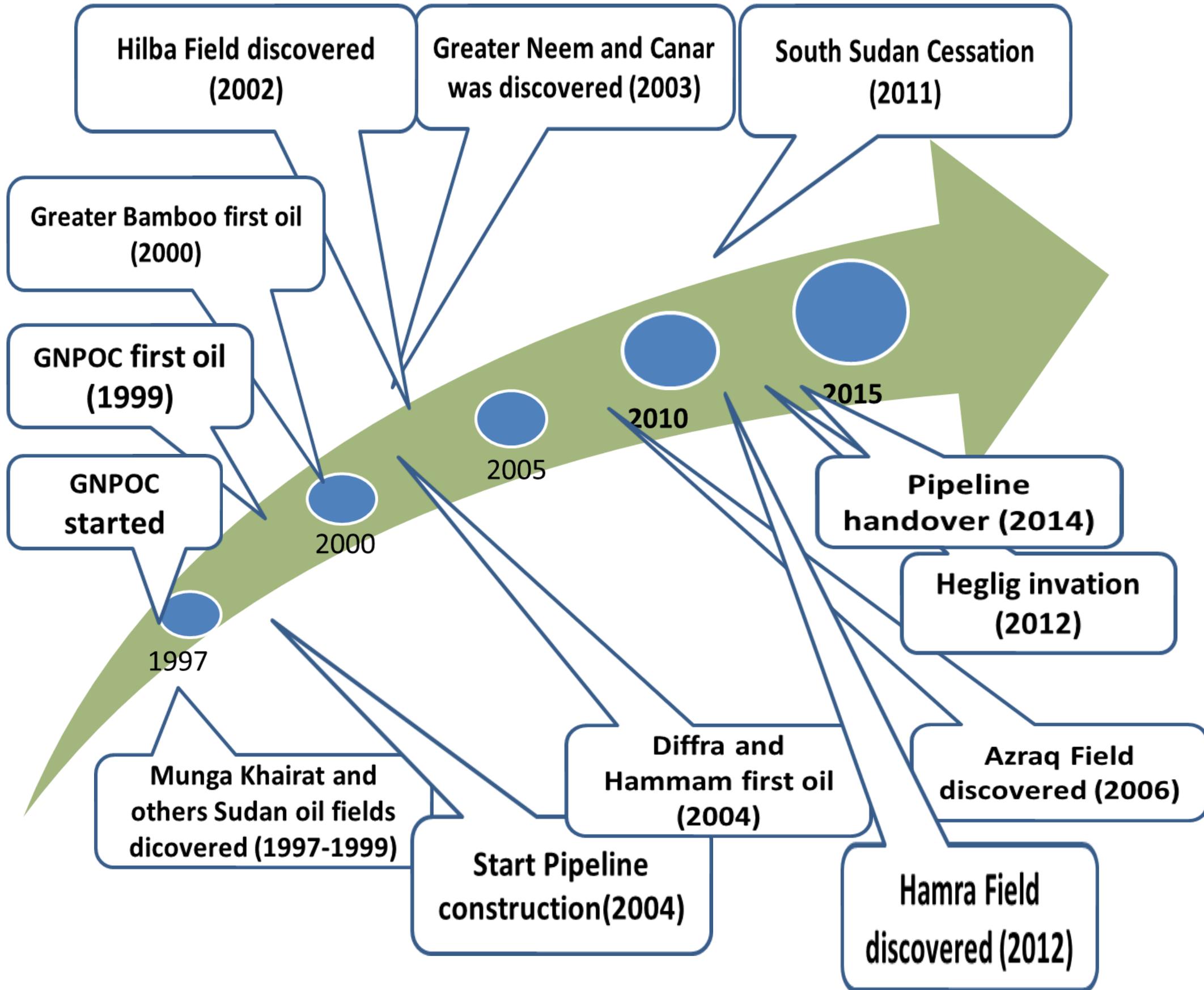


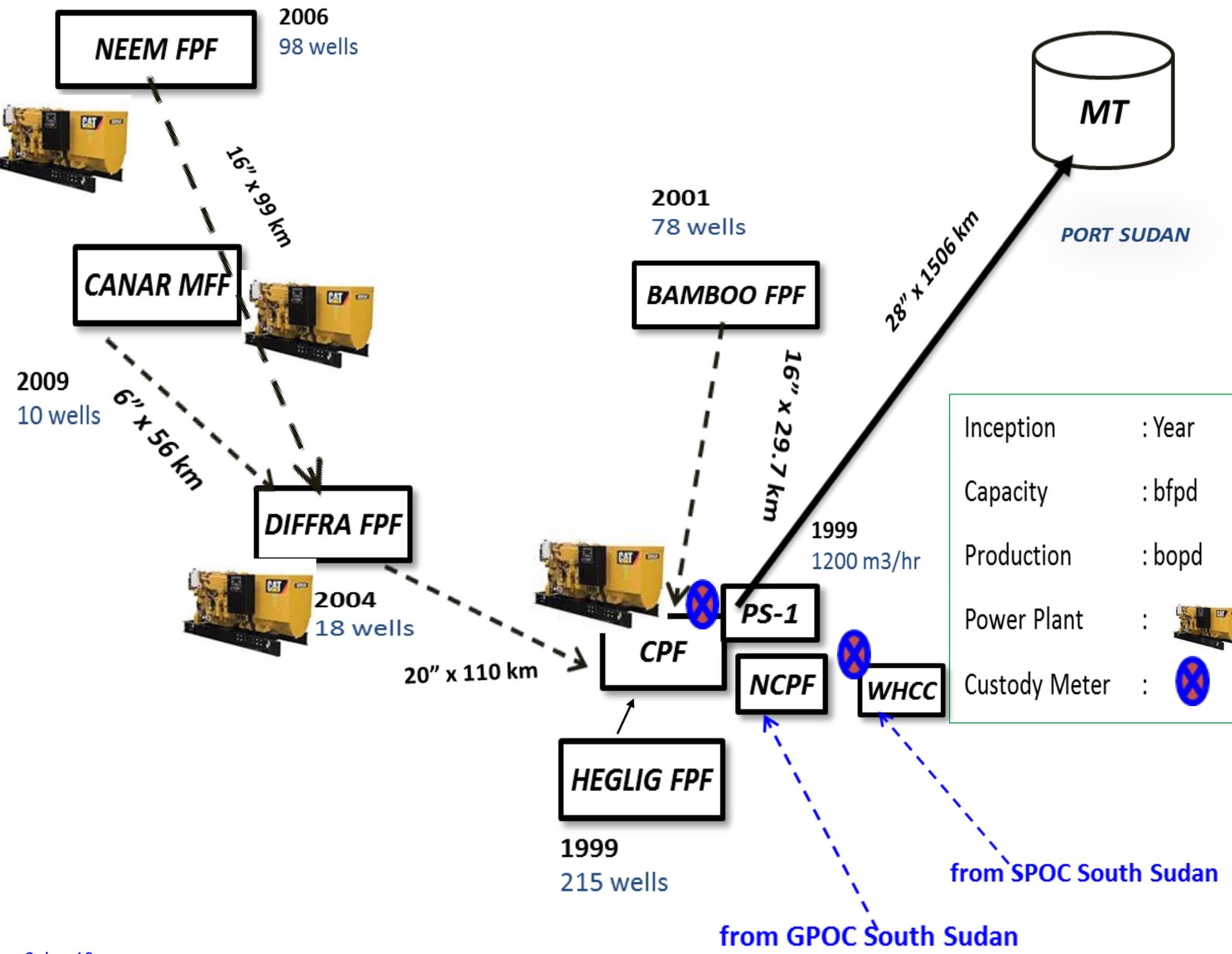
GNPOC Partners
CNPC -China (40%)
Petronas - Malaysia (30%)
ONGC - India (25%),
Sudapet - Sudan (5%).



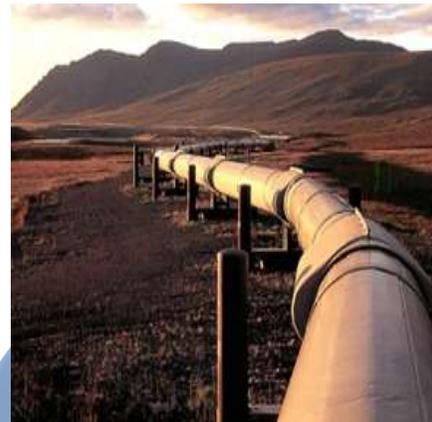
Block-4

GNPOC chronology

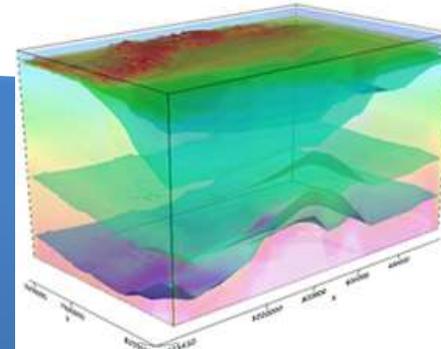




- ENMAX Technology
- Production Data Management System
- Crude and gas utilization on power generation
- Intelligent Pigging, PSV certification & Inspection



Production



Exploration

- Applying latest geophysical data acquisition technology; gravity/magnetic survey, dynamite/ vibroseis 3D seismic etc
- Advanced geological workstation with international standard workflow

Development

Operations

- Flow jet pump for testing new well .
- Multi Packer completion.
- Production logging tools .
- Dual ESP, ESP,RESP,BPU & PCP for tapping oil .
- Chemical & Mechanical water shut off.
- Cyclic Steam Stimulation (CSS).
- Miscible Gas injection.
- Water Injection.



- Utilizing recycled silicate mud for vertical development wells
- Utilizing the Power. V to reduce drilling time by increasing ROP
- Using Gel mud to drill surface hole instead of KCL polymer
- Changing Bit design to achieve shoe to shoe drilling

GNPOC adopted bioremediation method for treating the produced water based on the **root system mechanism**.

The **bacteria** found in the **soil** are enhanced by association with specific plants. It treat organic pollutants in waste water into harmless compounds by a process known as biodegradation.

The resulting products can be **carbon dioxide** and **water**. Bacteria that consume petroleum are known as “**hydrocarbon Oxidizers**” because they oxidize compounds to bring about degradation.

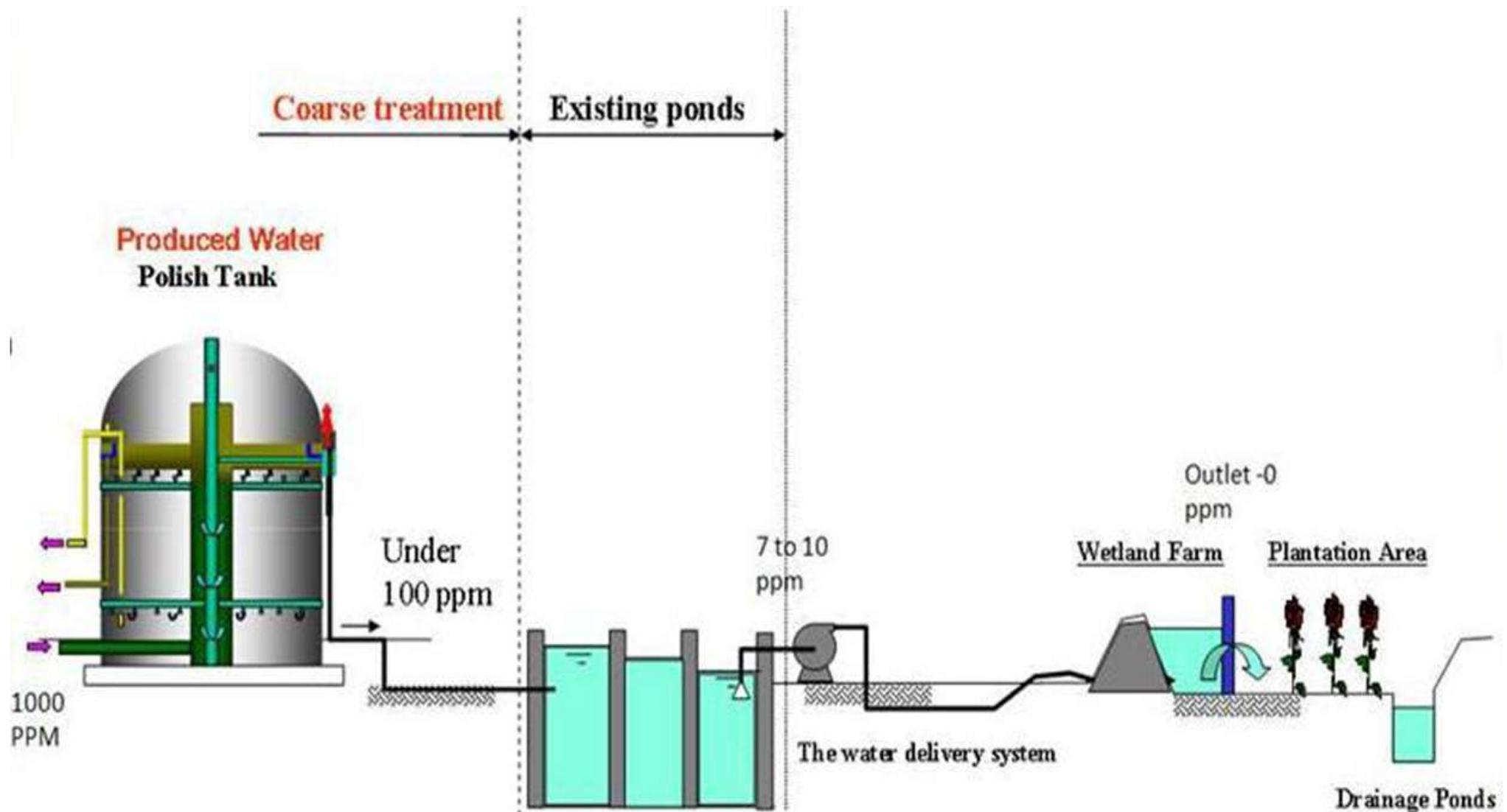
Phragmites australis is planted in reed beds. These plants transfer atmospheric oxygen down through their roots in order to survive in waterlogged conditions. This creates both **aerobic** and **anaerobic soil conditions**, allowing an extraordinary diverse range of **microbial species to flourish**.



The Bioremediation Network

Three stage process from the CPF/ FPF to treated water outlet

- ✓ Transfer of produced water from the CPF/FPF ponds to the Bioremediation storage lagoons
- ✓ Transfer from Lagoons to Reed beds
- ✓ Transfer from Reed beds to Balancing Canals



Heglig Bioremediation: harmful water changed to useful water

Heglig CPF



CPF Outlet to
Bioremediation System



Reed Bed



Forest



Nursery



Treated Water



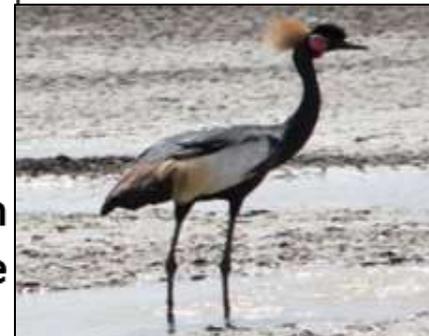


IUCN Registered Species observed at Heglig

(International Union for the Conservation of Nature)



To date 109 species of birds have been photographed in and around the Heglig bioremediation system.



Black Crowned Crane
(from Toma Nar '11)
Near Threatened

White-headed Vulture
Vulnerable

Bioremediation has provided a niche wetland habitat for a wide variety of species.

Wetland habitats are under threat across Africa and the world.

This project can provide a permanent wetland habitat for a variety of birds.



Rüppell's Griffon Vulture
Near Threatened

Black-tailed Godwit
Near Threatened





- Utilize treated produced water for irrigation & plantation.

- Create job opportunities for the locals



- Restore the habitat for wildlife.

- Reduce Greenhouse Gasses emitted in the Petroleum area.



Waste Management from Scrap to Useful Product

Resizing of waste



Transportation



Product

Recycling process



Participants: Contractors, Local Community Leaders & Members of the Youth Union

General housekeeping & Plastic campaign at Neem



Campaign for Collection of Used Plastic Bags basic school at Tuti



Shoreline Clean Up Campaign

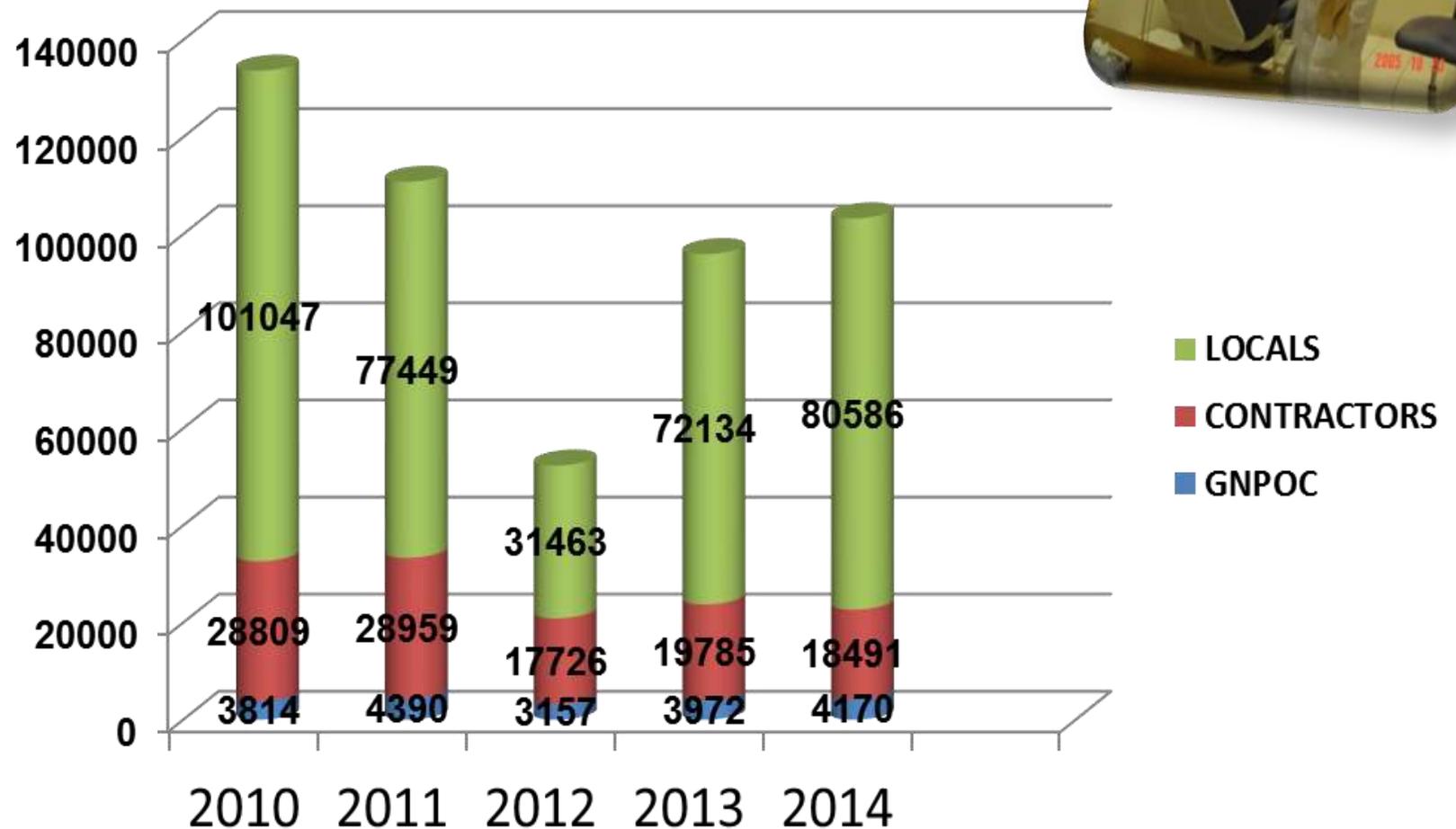


Environmental and Cleaning Campaign at SWAKIN Municipality



Patients Occupational Pattern Heglig Hospital & Field clinics

YEARS	GNPOC	CONTRACTORS	LOCALS
2010	3,814	28,809	101,047
2011	4,390	28,959	77,449
2012	3,157	17,726	31,463
2013	3,972	19,785	72,134
2014	4,170	18,491	80,586



Heglig Hospital



Outpatient



Medical Laboratory



Pharmacy



- ✓ The **UNEP** detailed finding relate only to the Heglig oil production facilities.
- ✓ **UNEP** finds environment related standards Management practices of these facilities to be of high standard and equivalent in several areas to best international practice.
- ✓ The reed bed system for treatment of produced water as was the advanced stage of implementation of ISO -14001 certified environmental. was particularly noteworthy. sites visited were notably clean of oil spillage or other evidence of oil losses to the environment.
- ✓ very little information is publicly available on these aspects since practices themselves were of a high standard, we felt that the company could have advertised its efforts more to increase awareness and take credit for its efforts.

Andrew Morton **UNEP**, Wed, April 19, 2006

On Mon. May 21, 2007, 12 members of the Assessment & Evaluation Commission (AEC) visited Heglig (GNPOC Bioremediation Project) and Faryang (Community Development Programs)



*Embassy of the United States of A
Khartoum, Sudan*

May 22, 2007

Dr. Yousif Mohamed Ahmed
Vice President
Greater Nile Petroleum Operating Company Limited
Khartoum Tower
Al Gamhoria Street
Khartoum

Dear Dr. Yousif,

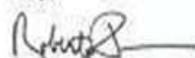
On behalf of the Working Group on Wealth Sharing of the Assessment and Evaluation Commission, I would like to thank you and your colleagues at GNPOC for the field trip to Heglig on May 21. The excellent arrangements for the aircraft, the vehicles, the presentations and site visits to the community and the bioremediation project demonstrate a real effort by GNPOC to make the visit a success. The information provided during the visit greatly assists the members of the Working Group to better understand the situation on the ground and to see first-hand the challenges facing Sudan. I believe it is always best to visit the field and to see the situation in person. Thank you for making the visit of our group possible.

Your offer to host the visit to Heglig and your superb organization of the visit underlines the commitment by GNPOC to work with the CPA process and build peace in Sudan. Your efforts in this regard are deeply appreciated by the members of the Assessment and Evaluation Commission.

The Working Group will report on the results of its visit to Heglig at the next AEC plenary session.

I wish you and your colleagues at GNPOC all success in your future endeavors in the petroleum sector in Sudan.

Sincerely,



Roberto Powers
Charge d'Affaires a.i.



*Embassy of the United States of America
Khartoum, Sudan*

May 23, 2007

Dr. Yousif Mohamed Ahmed
Vice President
Greater Nile Petroleum Operating Company Limited
Khartoum Tower
Al Gamhoria Street
P.O. Box 12527
Khartoum

Dear Dr. Yousif:

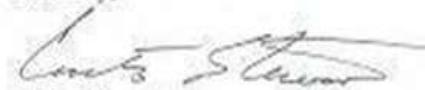
I am writing to express my personal appreciation to you for organizing the trip to the Heglig oil fields on May 21st.

The trip was one of the highlights of my time in Sudan. It was also very important for the work of the Assessment and Evaluation Commission. The trip provided the opportunity for me to see first hand the impact of the oil industry on the local community. I was especially impressed by the efforts to assure that benefits flow to all ethnic groups and to all parties. The fact that hundreds of people are returning to the areas around the Heglig oil fields is visible evidence that there has been an improvement in the conditions there.

Please extend my thanks to all the employees of GNPOC who worked to make the visit an outstanding success. The arrangements for the transportation, site visit to the bioremediation project and the Farayang community were all excellent. The driver of our vehicle, Khalid, should be commended for his safe driving. I regret that it was not possible to visit the hospital or to tour the Central Processing Facility, but perhaps on a future visit this could be arranged.

Again, thank you for making the trip possible. I hope to keep in touch with you in the future.

Sincerely,



Curtis Stewart
Economic Officer

Two United Nations Plaza, DC2-612, 44th Street, New York, NY, 10017

<www.unglobalcompact.org>

Mr Ibrahim Yusuf Gamil,
Field Base Manager,
Heglig Field,
Greater Nile Petroleum Operating Co. Ltd
Sudan

7th March, 2010

Dear Ibrahim,

My colleagues in the UN Global Compact as well as the investors representing signatories to the Principles for Responsible Investment are extremely grateful for the hospitality you showed us during our visit to the Heglig Field operations, as well as for the open and frank way in which both you and Mohamed Kamal, the head of HSE, addressed our many questions. Please pass my thanks on to him also.

Both I and the investors representatives were very impressed by the water treatment process. I have often heard allegations about the quality of discharged oilfield water in Sudan but as someone who has spent a lifetime in the hydrocarbon industry I can say that the quality of discharged water in the GNPOC operations is extremely high and indeed sets world class standards. In this way, far from causing a problem, it is providing a benefit to forestry and wildlife. As experience develops, I am sure that ways will be devised to ensure that the benefits from the supply of water are maximized and are channeled in directions which will be sustainable after the life of the oilfield. The work done by GNPOC and Oceans, the supplier of the technology, is very thorough and clearly includes thorough tests for any potentially damaging residues from the water.

In our discussions you made very plain the approach which the company takes to security and relations with communities. Your company security personnel are unarmed and the operation clearly depends on the good will of the people. Your approach to facilitating the resolution of disputes within and between communities appears very commendable to me, although we did not have the opportunity to visit a community or to see examples of the many schools and medical clinics which you have delivered in the area. These are clearly a great contribution to the local community and economy. The approach to training members of the local communities so that they may be employed on a temporary basis by subcontractors to GNPOC is an ingenious and effective approach to a community where many of the people are nomadic. The economic effect of this approach is probably to spread the benefits more widely than would be the case through a small number of permanent jobs.

We did have the opportunity to visit Heglig hospital and we were all extremely impressed by the enthusiasm of the four Sudanese doctors who have served for many years in the area.

..as someone who has spent a lifetime in the hydrocarbon industry I can say that the quality of discharged water in the GNPOC Operations is extremely high and indeed sets world class standards

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Dongfeng auger rig Drilling Shot hole



Puma Helicopter Supporting Swamp Operations



Dolphin Helicopter landing in the field.



Recording group laying out cables



Survey group staking line using Hug land



Steel Wheel Buggy Crossing swampy lake



Loading Crew Loading dynamite



Surveyor read position coordinate



Survey group staking line using Hug land

Main roads constructed in the field to support exploration , production and serve the surrounding community; around 800 km of elevated gravel roads and about 1050 km branch roads; below is details of the main roads:

- Muglad –Heglig Road ,**245km**, extended up to Bentuo **90km**.
- Heglig –Keilak- Um Addara **140 km**.
- Eldebab –Elsutabe Elmairam **110km**
- Njama –Diffra –Abyei- Elbantoon **100km**.
- Shalangoo –Neem Balila **75km**
- Valve 1-Abu Kadama **90km**
- Neem- Abu Lukri **30km**
- In addition to around 100 water pits and Hafiers . **40 %** has been selected by CD programs and 60 % water pits constructed during construction stage by reshaping of the quarrels along the roads .
- Also a lot of pads for new villages and internal roads in towns (Muglad, Debab, Suttabe ,Abyei, Keilak Elbhaira, Lagawa).

Drilled 165 Water wells

Drilled 23 Water Ponds

Donated 282 Hand pumps



Built 90 Schools

Donated 629 Villages with
school furniture

Donated 47,080 Schools
uniform



Built # 7 Hospitals.

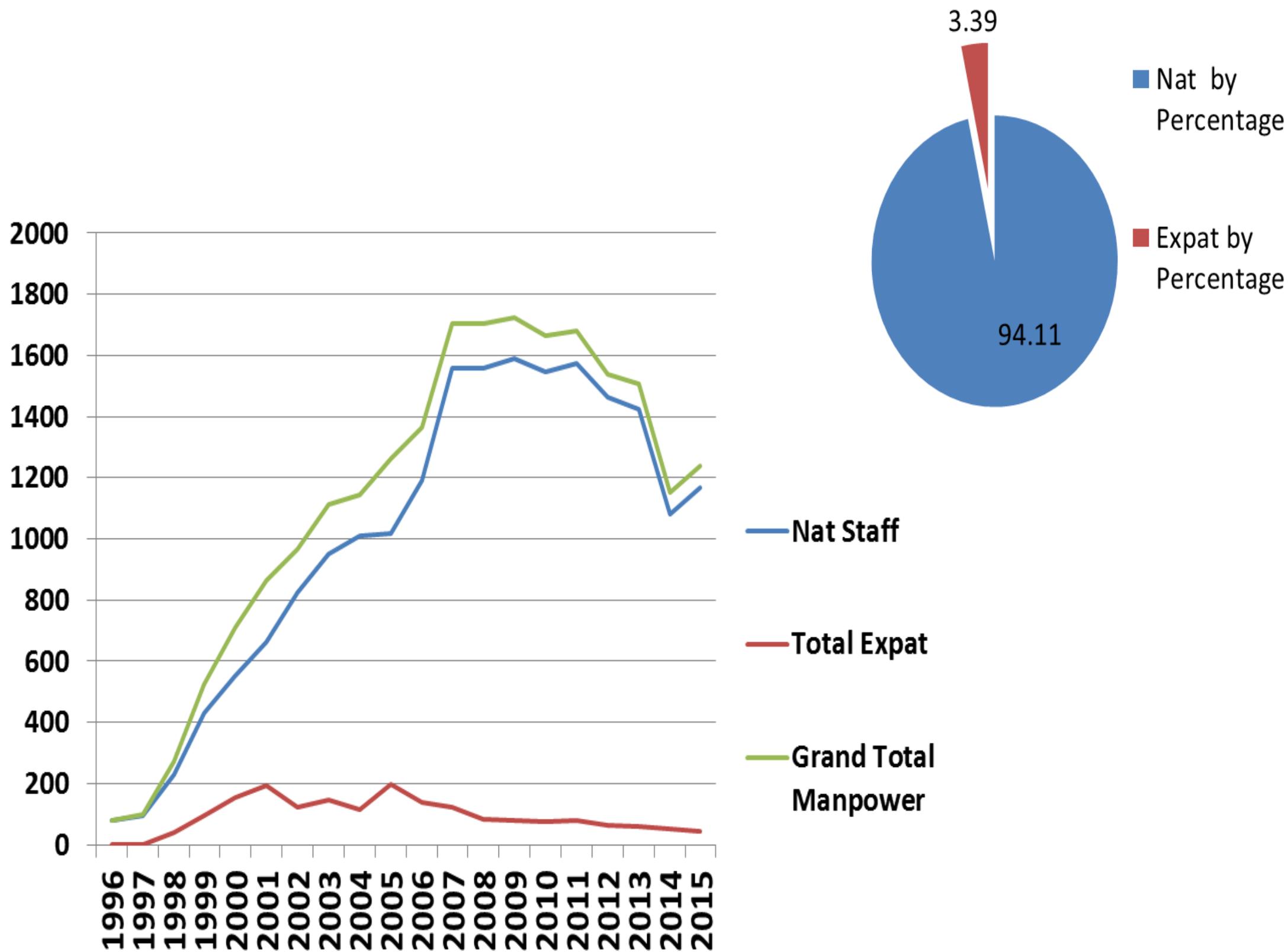
Built # 90 Clinics.

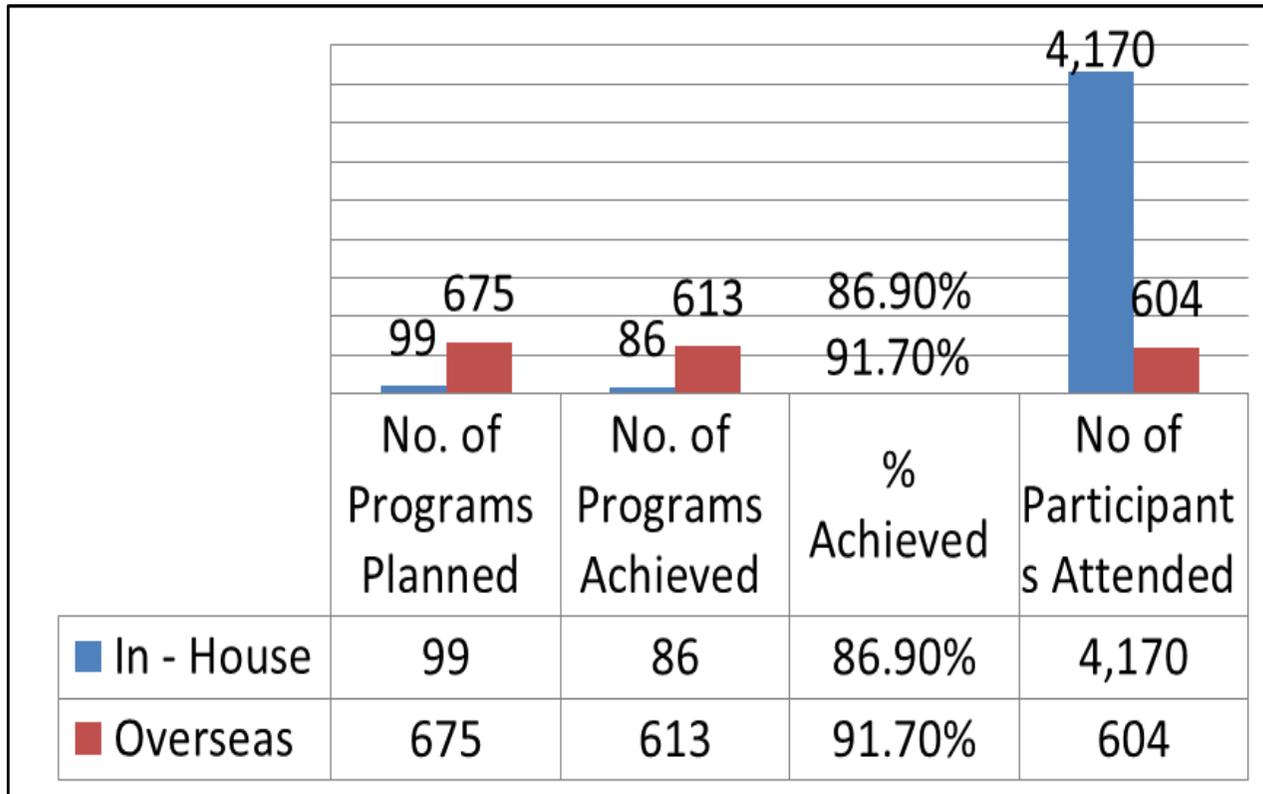
Supported # 834 Days of
Mobile Clinics.

Supplied medicines to # 400
Villages.

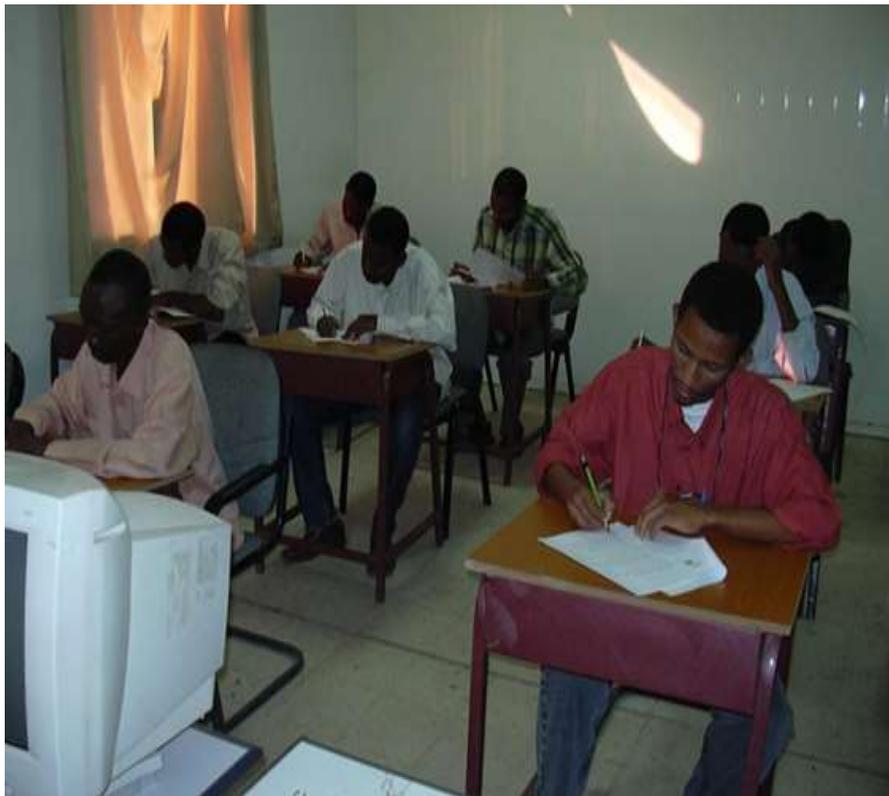


GNPOC Sudanaized 94% of its positions since inception year to date

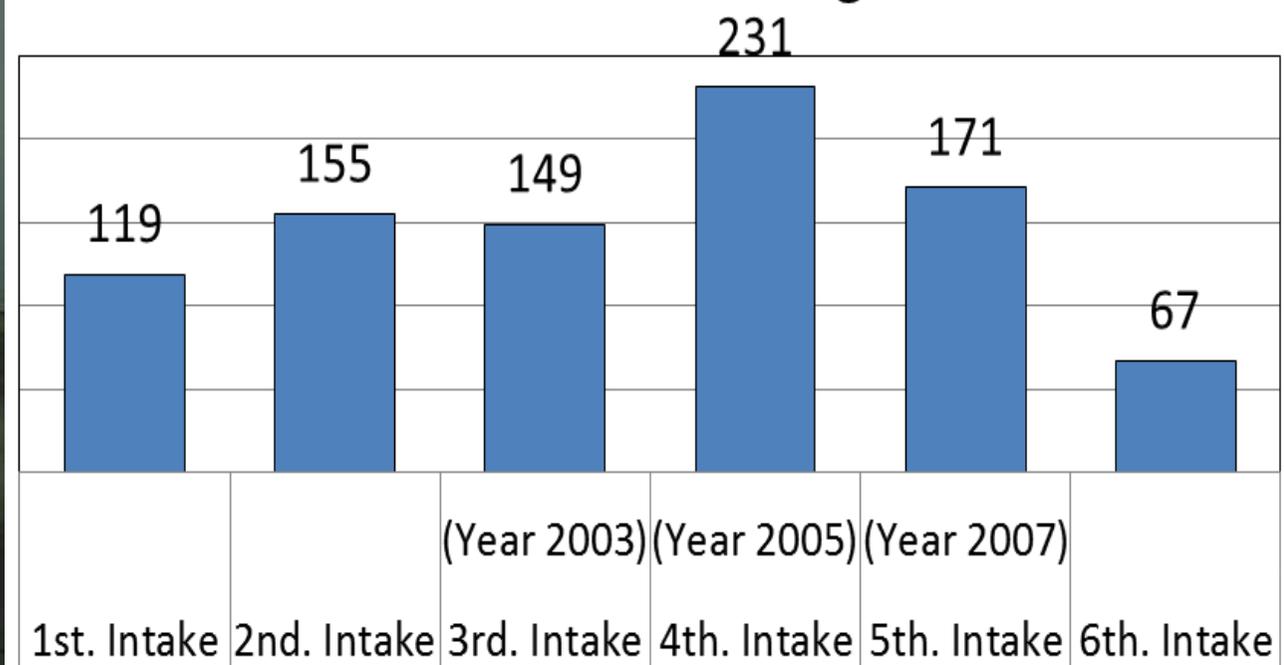




GNPOC Developed its own training Center.
GNPOC focused on in-house for basic training and send staff for overseas training for advanced training



Intakes Batch Training





Production maintenance trainee.



On job training – Heglig field



- limited choice of technologies



- Decline of the oil price;
revenue loss



- Power stability

