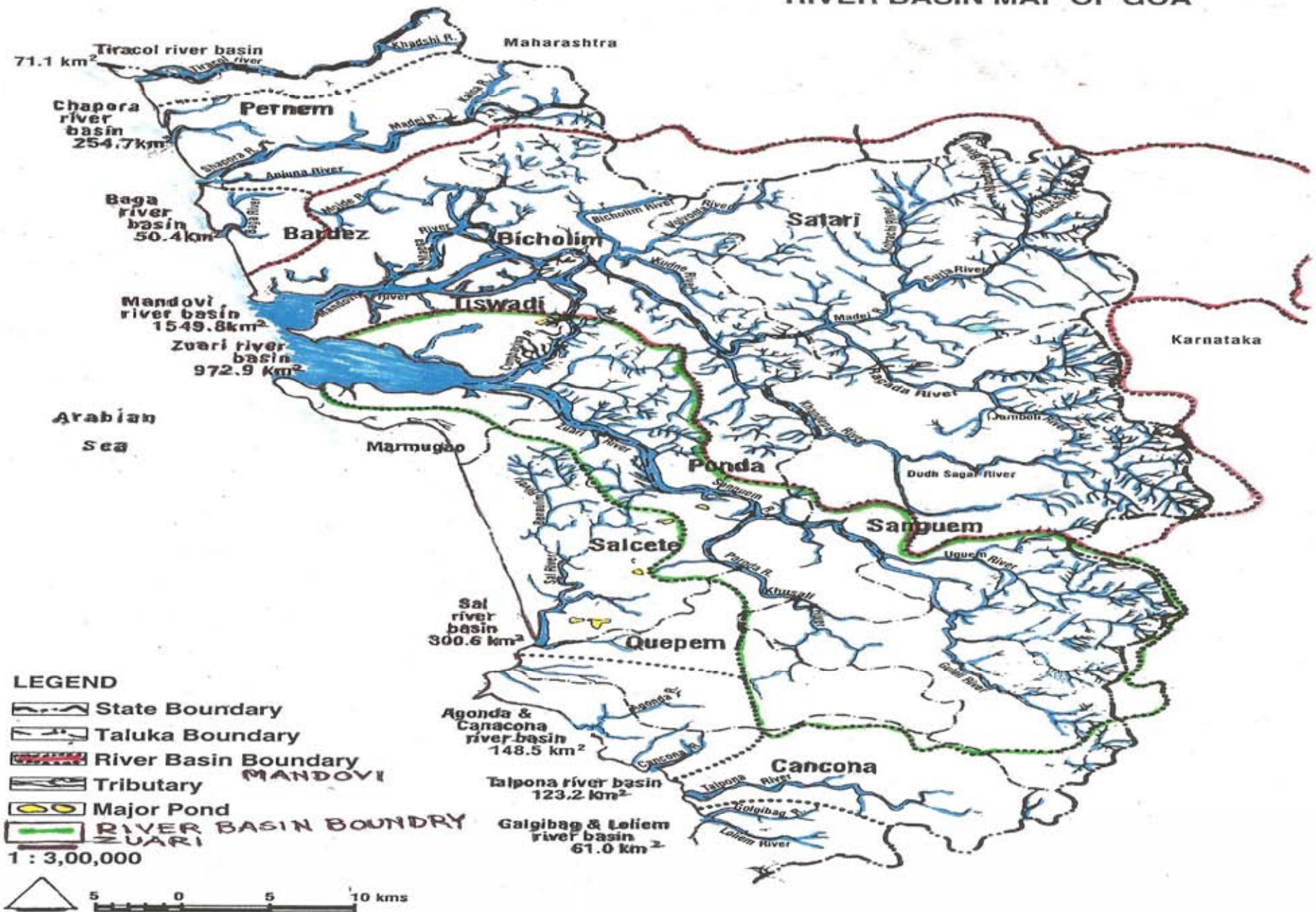


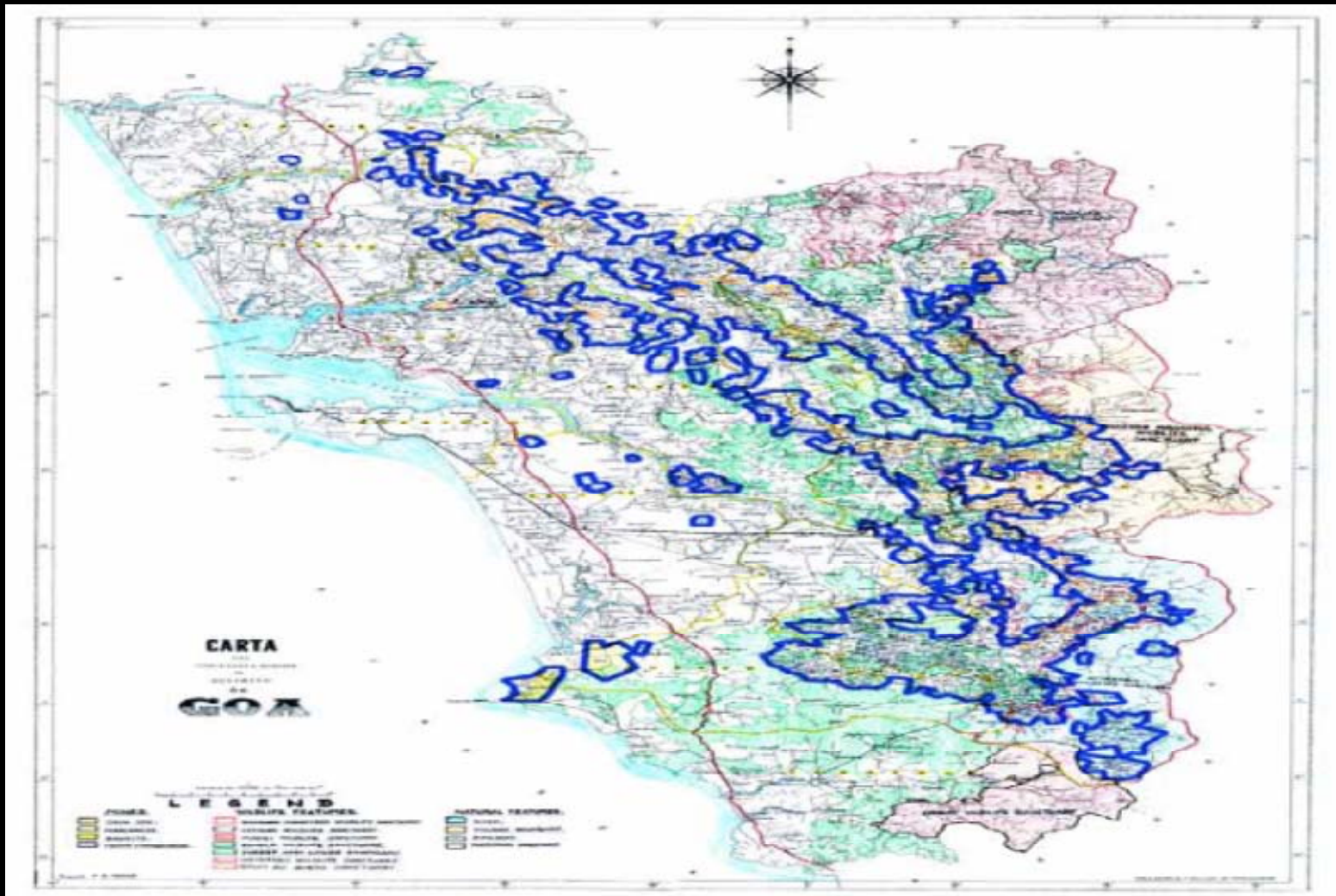
ECO SENSITIVE  
SUSTAINABLE  
MINING  
IN  
GOA ?

by  
MR. RAMESH S. GAUNS

# RIVER BASIN MAP OF GOA



Mining Leases running for 75 kms out of total 105 kms  
North to South dividing Goa into East and West

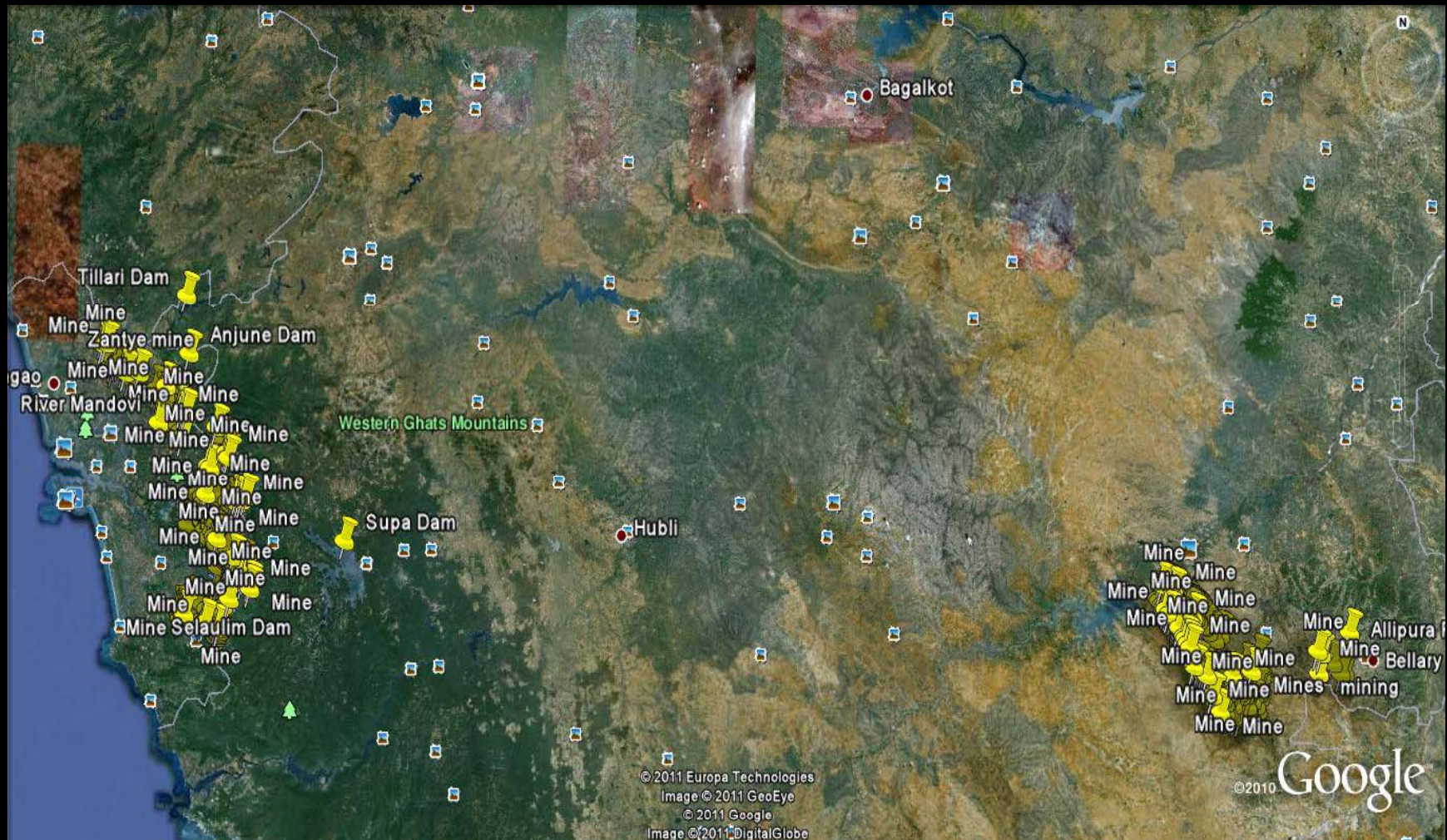




## Cross- Section showing Natural Regions



# Goa and Bellari Mines



# Goa's Facts

- 102 mines in 1 km distance of 12 water bodies with 536 sq km of forest in Sanguem in S. Goa.
- 80 mines in 1 km distance of 22 water bodies including Life line of N. Goa, Mandovi in N. Goa
- 105 MINES OPERATING HAVE 104 PITS FULL OF GROUND WATER.
- Goa is a tiny coastal state with hardly 50km width between Western Ghats and Arabian Sea.
- Saline water intrusion due to tidal influence, is felt up to 40km post monsoon. Exploration of ore , in Ghats and Plateau Region, with already 60% of the mines operating below GWL as per Regional office MoEF Bengaluru. (Bangalore).



# NATURAL WATER BODY VANISHED - The economic loss ?



# BREECH OF LAW LEADS TO BREECH OF MINING !





# SUSTAINABLE ECONOMIC ACTIVITY RUINED- CAN MINING SUBSTITUTE IT ?





# PADDYFIELD-LOST FOR MINING!



Trees cry for water, thanks to mining





# PADDY FIELD AT SHIRGAO – STORY IS REPEATED





# River Kale Upstream Opa Khandepar river.





# Peninsular Mine!



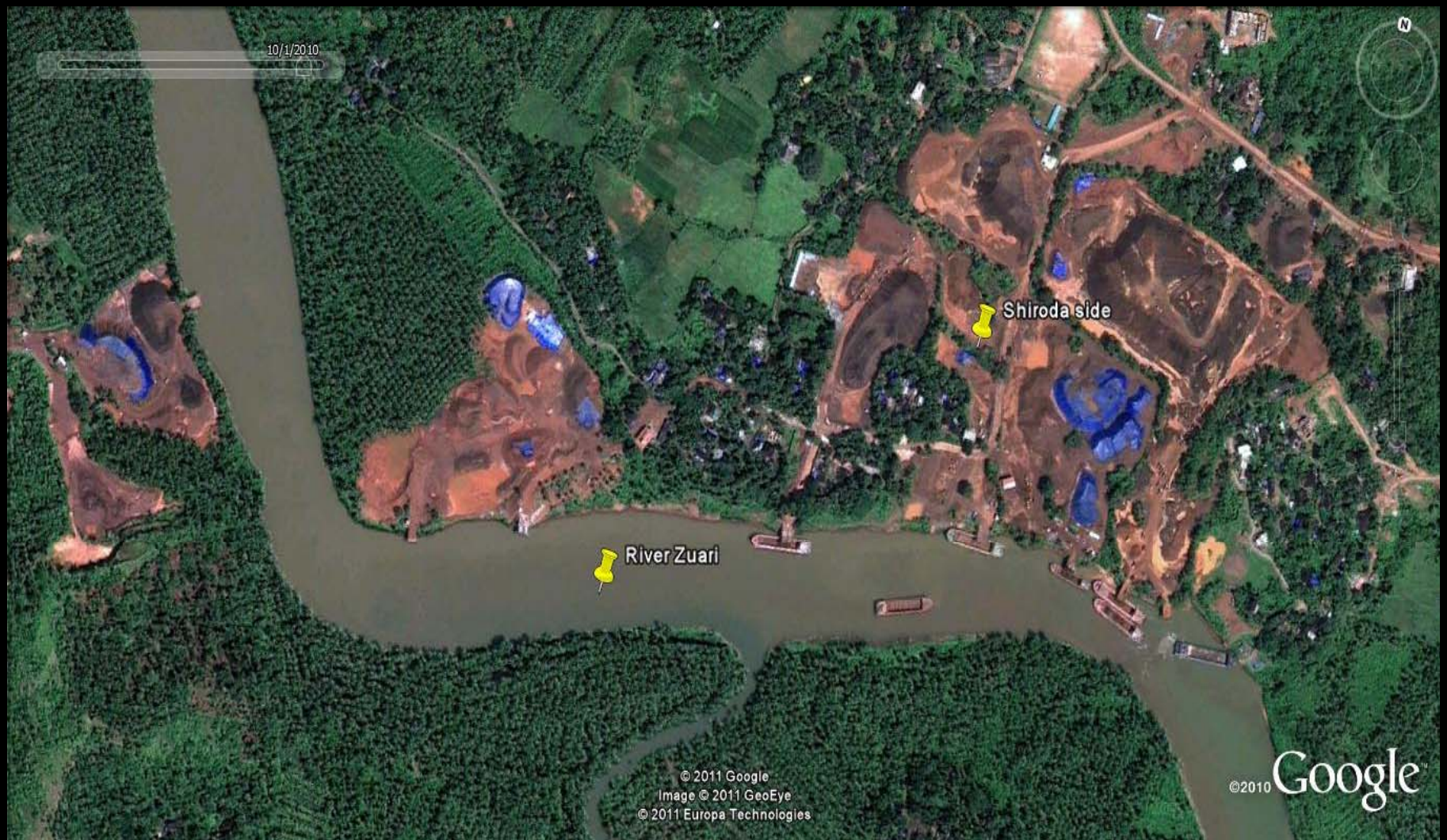


# River Mandovi - the worst affected river...!





# River Zuari and ore stacking



# Wither Water sources

Traditional water sources destroyed for foreign exchange and private gains.

Under Mining sustainability of water bodies.



# Total Siltation of Mulgao Lakes





# MOCKERY OF EC & THE MONITORING OF EC CONDITIONS





# Ugem abandoned mining pit



- No worries if Selaulim reservoir dries...!

# Pit and Ground Water





# TRAGIC CONDITIONS OF THE VILLAGE WELLS!



# Mining pit with water and dry wells- Pissurlem..sorrows not reflected in EIA's!





Drinking ...



RIVERS

MERCYLESS DESTRUCTION



“*Teerth*” on the eve of *Gokulashtami* in front of Sapta  
Koteswar temple, Khandepar - 21 mines in  
1 km distance !



Opa Project - 30% of population  
drink this water- 21 ML in 1km.





# Down stream impact on the drinking water because of mines



# KUDNE RIVER

4 mines in 1km distance.





# Kushavati in S.Goa - 37 mines in 1km distance!



# RED MANDOVI RIVER



- No. of loading points – 37 .
- No. of mines in the catchment area – 27.
- All mines generate 101250 T/ Day. (Rich land poor people)
- Drains 43500 ha. of forest land.
- 70,000 cu,tones iron particulates get deposited every year.- DR. SEN GUPTA N I O ( 1973)
- EIAs have no space to mention this!



# Harvalem Water Fall- Collapse of E-laws!



# The Selaulim dam reservoir- 55% of population depends.





# GOOGLE IMAGE -PITS & DAM



# WESTERN GHAT TALUKAS

- TOTAL AREA COVERED – 1687.12 sq.km
- TOTAL FOREST AREA – 1130.47 sq.km = 83.11% (GOA'S TOTAL FOREST OUT OF 1360.24 sq.km)
- TOTAL MINING LEASES – 379(old documents).
- TOTAL AREA UNDER WATER BODIES – 55.90 sq.km
- TOTAL AREA UNDER ORCHARED – 271.49 sq.km.
- 45% of total Geographical area , population 12%



# GOA AT A GLANCE

- TOTAL GEOGRAPHICAL AREA – 3702 Sq.km.
- No. OF MINING LEASES – 864 (as per old documents)
- IRON ORE PRODUCTION PER YEAR CONTRIBUTED TO INDIA'S PRODUCTION – 50%
- GOA IS 1:888 (0.11%) TIMES SMALLER THAN THE REST OF THE COUNTRY.
- GOA PRODUCES ORE to the tune of 465 TIMES MORE THAN ITS GEOGRAPHICAL POTENTIAL .
- AT WHAT COST?
- The Total catchment area of all the rivers of Goa is 3532.4= 95.41%
- RIVERS MANDVI & ZUARI HAS CATCHMENT AREA 68%, OF GOA'S TOTAL GEOGRAPHICAL AREA HAVING MORE THAN 40 MINING LEASES UNDER OPERATIONS. OUT OF 11 TALUKAS 5 TALUKAS HAVE MINES UNDER OPERATION!
- MIDLAND TALUKA AREA 22.95% ,POPULATION 21%
- COASTAL TALUKA AREA 23.76% , POPULATION 59%
- GHAT TALUKAS AREA 45% , POPULATION 12%

# MINING & ECONOMY

- In the last decade average export=31mt/y.
- Total transaction=Rs171120 crores.
- Net profit app.=Rs 110227 crores for Co.
- Govt's annual budget=Rs 6000 crores.
- OB generated 930 mt.in the last decade.
- Exported ore in 2011=54mt.
- Around 10,000ha of agricultural land lost as of today.(App as no data with agri. dpt.)



# MINING AND WATER

- OPA SUPPLIES WATER TO 30.94% OF THE TOTAL POPULATION OF GOA.4 LEASES IN THE CATHMENT AREA.
- SELAULIM SUPPLIES WATER TO 55% OF THE TOTAL POPULATION OF GOA.16 LEASES IN THE CATHCHMENT AREA.
- TOURISM DEPT.(ECONOMIC SURVEY 2006 – 07)
- “.....the Govt. pipelines are either dry or do not have capacity to cater to the need of the tourism industry.”
- Suggestion “..... Commissioning of the Tillari project at the earliest.”
- (No. of tourist 2006 – 23,41,649)

In the 1989 Convention of the Rights of the Child, Viz., Art.24 paralleling Art.25 of the Universal Declaration of Human Rights.

- “Combat diseases and malnutrition... through, inter alia, ... the provision of nutritious food and clean drinking water”
- Interpreted, Art,8 of the Declaration on the Right to Development adopted by the UN General Assembly in 1986, “Denied access to such essential as food , water, clothing, housing and medicine in adequate measure” representing a clear and flagrant “mass violation of human rights”



CAN SUSTAINABLE MINING BE  
A REALITY  
OR  
AN EYEWASH?

WE NEED TO ANSWER OUR  
FUTURE GENERATIONS  
FOR SUSTAINABLE  
ECONOMIC DEVELOPMENT!

THANK YOU .