



## Presentation on Water Quality Conservation in Community



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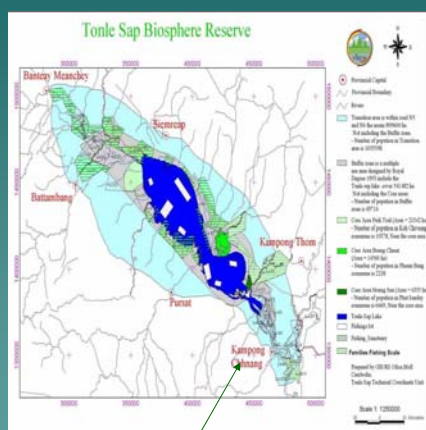
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## 1- General Situation of Province

- ◆ Kg. Chhnang is one of five provinces around Tonle Sap Great Lake. It is covering with 552 100 ha and divided as following as;
  - Cultivated land: 180 926 ha (upland rice, flooded rice, dry season rice and plantation)
  - Residing land: 23, 23 ha
  - Mountainous area
  - Condense Forest: 34, 866 ha
  - Semi condense forest: 880 ha
  - Shrub Area: 99, 552 ha
  - Flooded forest: 50, 241 ha
  - Grass land: 29 686 ha
  - Others: 65, 385 ha (State land, Road, River cliff, River, Streams, Parks ....)

## 1- General Situation.. (cont.)



**Kg. Chhnang**

- ◆ Bordering
  - Kampong Thom on the North
  - Kampong Cham on the East
  - Pusat on the West
  - Kampong Speu on the South
- ◆ About 91 Km from Phnom Penh
- ◆ There are 3 lines of road:
  - National Road No. 5 is 94 km
  - Navigation road is 110 km
  - Rail way: 73 km

## 1- General Situation (cont.)



- ◆ Geographical terrain of province is divided into 3 zones
  - Mountainous zone
  - Flat land zone
  - Low land zone

## 2- Demography around Tonle Sap Great Lake

- ◆ Context: The destruction that province encountered as other provinces in the country (human resources and infrastructures). According to ADB report in 1996, it is estimated that Teachers and educational staff about 70-80% were dead of starvation and exhausted. In 1979, there were primary schools at communes and districts less than 30-40 rooms (ADB,1996) and most of the students did not go to school. Until 1980s, although people who lived along river are increasing, the education system still lacked of effective implementation. It is the problem that is a problem in participating Tonle Sap Management.



### Changing:

Referring to census of Kg. Chhnang 2008, total population is 475 014

- Female: 47 109 and male: 97 378 with 97 378 families and growth rate is 2.26%

- People live in low land area of Tonle Sap Great Lake around 47%, equal 6 districts and 32 communes that located Tonle Sap Great Lake Biosphere Reserve. A part from this, there are people living in 11 floating villages as:

- Chhnuk Tru: 4 villages
- Plov Touk: 3 villages
- Kampong Prasat: 1 village
- Meat Kampong Phsar Krom: 2 villages

### • Population density<sup>3</sup>

- Average: 94 people/km<sup>2</sup>
- People are living along the river is not high among other 5 provinces, because currently they moved from the floating village to up land village to be workers to the developed area (work in factory, construction etc).
- Their concepts are that the current resources in the Tonle Sap Great Lake are no longer to support their living.
- The average number of their families members is 5.12 people. It is the most numerous number if compared with people who live on upland area and towns. The family in this area headed by female that unbalance to male (census report)

## Ethnics



- There are 3 kinds of Indigenous people who live in Low land zone of Tonle Sap of Kg. Chhnang:
  - Khmer: 90%
  - Khmer Islam and Vietnamese 10%

## 3- Factors that harm to water quality of Tonle Sap



- ◆ Population growth: gradually increasing (most from outsiders).
- ◆ Wastes: Solid waste and waste water (direct and indirect)
- ◆ Wastes from handicrafts, exploitation
- ◆ Agricultural waste
- ◆ wastes from fishing (fishing lots for Prahok)
- ◆ Wastes from aquarium, food, fish
- ◆ Wastes from medical treatment (private sector)

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- Solid waste and waste water:

This province has 11 floating villages with about 5500 families. Actually, The management of all kinds of wastes is not working. River is the hole to receive their wastes. However, there are many sorts of wastes which are discharged into Tonle Sap such as:



## *Continue*

- ◆ Sewage in province
- ◆ Wastes from agriculture, chemistry, pesticide: people use them to increase products and protect their crops
- ◆ Commercial Wastes of district and provincial town.
- ◆ Wastes from land erosion derives from deforestation at upland areas, low land areas or developing areas.

## 5- Public Participation for Water Quality and Natural Resource Management of Tonle Sap Great Lake.

Stakeholders who have the duty and obligation in Managing water quality:

- ◆ **Local Authority:** Directly implement to develop planning and policy for managing water quality, solid waste, Natural resource site in their area of Tonle Sap. Moreover, it has the duty to develop and tourist sites of the province, monitor and investigate water quality and report to involved agencies in order to control, prevent the destruction of natural resources.

## 5- Public Participation for Water Quality and Natural Resource Management of Tonle Sap Great Lake.

Stakeholders who have the duty and obligation in Managing water quality:

- ◆ **NGOs:** They are the agencies that can contribute to support finance and skill to community such as providing skill of planting flooded forest. These NGOs are Kang Ri, CCD... Also, there are some other projects of the Government as TSSL, PIU, TCEM etc. Besides this, there, also, is the assistance to develop community and community for conserve forest of islands. Also, there are small projects to restore infrastructures and income increasing and small scale credit. These projects do not impact on water quality, because They got EIA before carrying out.

## 5- Public Participation for Water Quality and Natural Resource (cont.)

### From 2004 until 2011

- ◆ Tonle Sap Great Lake Project has focused on three goals: Pilot project of organizing conserving areas in Tonle Sap Biosphere Reserve, Monitoring and investigating biodiversity and capacity building on natural resource management.
- ◆ The project on Conservation of Tonle Sap Great Lake is in the third section The project on Environmental Management of Tonle Sap Great Lake. This project focuses on strengthening capacity of Environment to 32 targeted communes that located in the area of Tonle Sap Biosphere Reserve of Kg. Chhnang. Moreover, there are some NGOs such as FACT, PNPk, DATE

## 5- Public Participation for Water Quality and Natural Resource (cont.)

- ◆ **Community:** It is the mixture group of indigenous people and religions, and the areas or local resources. The need of rural communities depend on ages, class of people, ethnics... and also depend on right, politics and economics that mean joining to work together in community and government to governing by clearly separated between state agency and people in community (top down management). It means that community is the implementer and the government is inspector.
- ◆ **Monk:** Cambodian people about 90% are Buddhist. Buddhist religion also joins to make religious ceremony for trees in pagodas and to promotes monks and community to plant trees. The education and dissemination from monks are held in the ceremonies



## 5- Public Participation for Water Quality and Natural Resource (cont.)

- ◆ **Schools:** It is a place to grow bamboo shooter. If the bamboo shooter is good, the bamboo will become good. Therefore, schools in community of low land area of Tonle Sap in Kg. Chhnang not only have program of educating students in schools, but also have other programs to disseminate out side of schools such as participating Tonle Sap conservation as well as organizing reading club (in Chhnuk Tru, Boribo district)

## 5- Opportunity and Threats

- ◆ **Opportunity:** For the last few years, Water quality Management of Tonle Sap is only focused on by the Environment agency, but there are many agencies have to join and cooperate to carry out laws such as monitoring water quality of sewage, dumping site, service arrangement of solid waste collection, to control waste water from handicrafts, to promote organic products and organic fertilizer, educate how to plant flooded forest. They are to push and widen local community participation.

## 5- Opportunity and Threats (cont.)

- ◆ **Threats:** there are three factors threatening water quality of Tonle Sap as following;
  - The knowledge of people in community have limited. It is a factor that causes their participation in conserving and solving the problems.
  - Law enforcement of technical agencies encounter the illegal operation that is easy to be ineffective and un transparency.
  - Urgent consumption of people is abundant. It is because of poverty, daily strong need for their living that make them to break laws, lose their national identity and think about their personal property without thinking the next generation.

## 6- Constraint

- ◆ **Budget:** currently, most NGOs and government are facing to conserve Tonle Sap Great Lake such as to contribute to eliminate poverty of people. However, this development movement is slow and almost can not work because much requirement and budget is least. Another reason is that the development does not meet the need that is a factor of losing flooded forest, shortening amount of fish, poisoning water birds, practicing chemical fertilizer and pesticide.
- ◆ **Laws and regulation:** The concept and action that is happening is a new case of people. Hence, law enforcement on water quality management

## 6- Constraint (cont.)

- ◆ **Laws and regulation:** The concept and action that is happening is a new case of people. Hence, law enforcement on water quality management of Tonle Sap (water pollution control, solid waste management and waste water...) is difficult for community to receive urgently because it is a habit for long time ago such as partisanship, corruption, or changing house from water area to land area. It is a law to add more and it just is implemented effectively.

## 7- Conclusion and Recommendation

- ◆ Establish law anti-corruption immediately because it is a main factor to reduce water pollution effectively.
- ◆ To promote education and dissemination about water pollution of Tonle Sap broadl. It is a most important and it is called the owner of natural resources.
- ◆ To strengthen capacity of fishery community of management or community of island forest both knowledge experience and materials that are easy to manage effectively in the future.
- ◆ To promote organic agricultural extension in communities around Tonle Sap because it is the food that is not harmful to public health.
- ◆ Looking for dumping site and waste collection service for floating villages an low land area of the lake side in order to avoid discharging waste into the river.
- ◆ To carry out the law strictly on violators. It is to promote law effectively and transparency.

