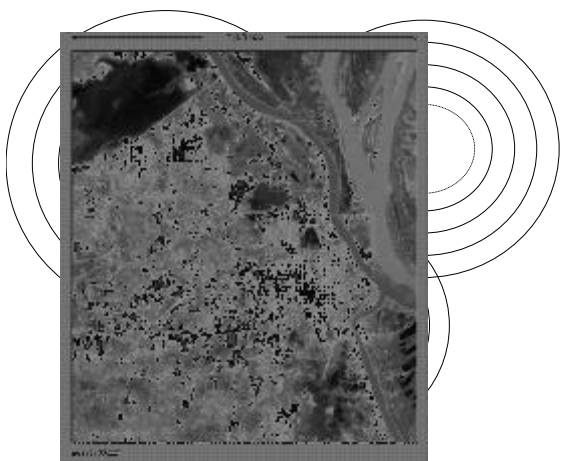


Production in Aquatic Peri-Urban Systems in Southeast Asia

Work Team

Mr. Chhouk Borin, Mr. Sam Chin Ho, Mr. Thak Kuntheang
 Miss. Chhim Rumny, Miss. Sok Daream, Mr. Srey SamAn
 RUA: Royal University of Agriculture

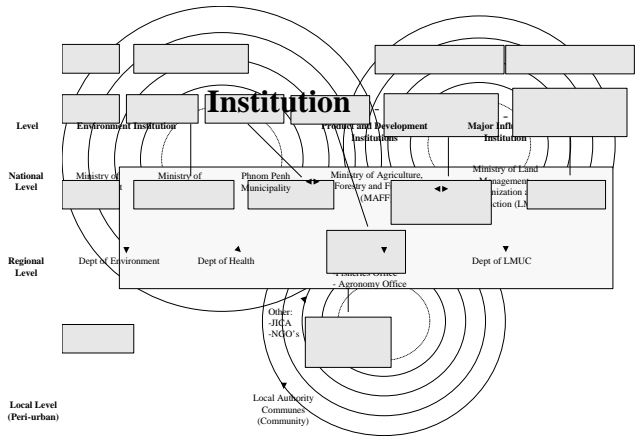


PAPUSSA

Main sites:
 -Cambodia (Phnom Penh),
 -Thailand (Bangkok), and
 -Vietnam (Ho Chi Min and Hanoi)

Phnom Penh, 3 areas in and around the city:
 -Boeung Chong Ek
 -Prek Phnov
 -Boeung Kok

Activities:
 -Market survey
 -Participatory community appraisal
 -Institutional analysis



Participatory Community Appraisal (PCA) in and around Phnom Penh



Overall objective of the PCA

- To identify well define community and get overall view of their livelihoods, environment, history and socio-economic structure.
- To identify the problem and constraints of the community and related them to their livelihoods and peri-urban aquatic production system, and
- To identify strategies or recommendations for future interventions.

Fish Farm



Morning glory Field



Methodology of the PCA

Communities and Participants

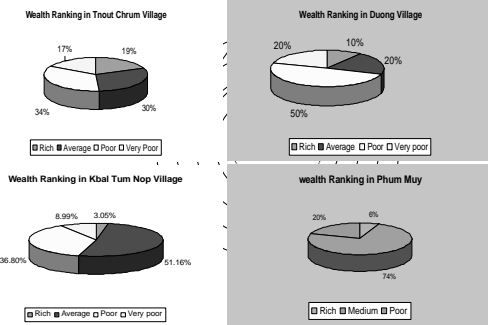
| Community | Male (Person) | Female (Person) | Total (Person) |
|----------------------------------|------------------|--------------------|-------------------|
| Tnout Chrum (Boeung Cheng Ek) | 12 | 10 | 22 |
| Kbal Tumnop (Boeung Cheng Ek) | 13 | 9 | 22 |
| Doung (Prek Pnov) | 9 | 12 | 21 |
| Mouy (Boeung Kok) | 15 | 11 | 26 |

Tools of The PCA

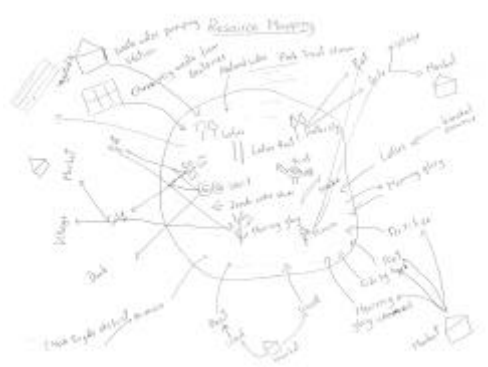
- Community map
- Resource mapping
- Socio/wealth ranking
- Timelines
- Seasonal calendar
- Activities matrix
- Problem ranking

Result of the PCA

Wealth ranking



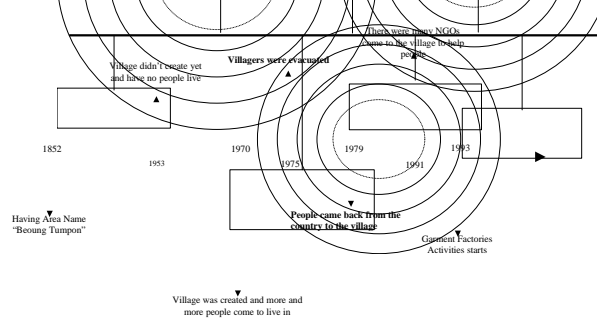
Resource Mapping



Community Mapping:

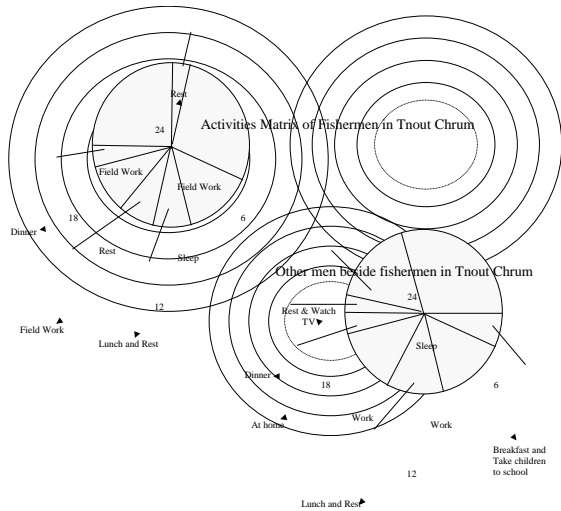


Time line:



Seasonal Calendar:

Representatives of each place showed about their work from the beginning to the end of the year. In Kbal Thom Nub and Tnut Chrum, most of the people produce yearly. In Muy village, culturists have more work such as caring and feeding almost a year but others have other job to do too. In Doung village, there are most of Khmer, Vietnamese, and Cham ethnic are fishermen and culturists to busy nearly a year.

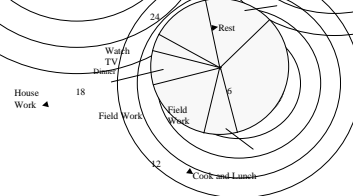


Food Consumption:

We showed that information on food consumption of the 4 villages have the similar food which they mostly use from purchase, others from self-produce, nature and support (very low level).

Activities Matrix

Activities Matrix of Women in Tnut Chrum



Problem Ranking Activities in Mouy Village



| Problem Ranking in Tnut Chrum | | | | | |
|-------------------------------|---|--------|------|-------|------|
| No | Problem | Female | Male | Total | Rank |
| 1 | Lack of Capital | 27 | 29 | 56 | 3 |
| 2 | Health Problem | 21 | 34 | 55 | 4 |
| 3 | Natural Disaster (Storm...) | 14 | 8 | 22 | 17 |
| 4 | Less Fish | 12 | 11 | 23 | 16 |
| 5 | Lack of Transportation | 18 | 32 | 50 | 7 |
| 6 | Thief (Steal net, boat...) | 25 | 26 | 51 | 6 |
| 7 | Change somebody's money | 26 | 34 | 60 | 2 |
| 8 | Water Quality (Effect health and Product) | 20 | 23 | 43 | 9 |
| 9 | Insecurity (Using drug boy) | 21 | 15 | 36 | 12 |
| 10 | Not be able to support the children's study | 25 | 50 | 75 | 1 |
| 11 | No fresh water source | 22 | 14 | 36 | 12 |
| 12 | Far from electricity place | 27 | 19 | 46 | 8 |
| 13 | No market for morning glory | 19 | 34 | 53 | 5 |
| 14 | Lack of health center | 18 | 23 | 41 | 10 |
| 15 | Lack of hygiene knowledge | 21 | 13 | 34 | 14 |
| 16 | Lack of toilet | 23 | 14 | 37 | 11 |
| 17 | Lack Sewage pipe | 13 | 13 | 26 | 15 |
| 18 | Difficult road | 19 | 16 | 35 | 13 |
| 19 | Rain forest logging | 10 | 6 | 16 | 18 |

| Problem Ranking in Doung Village | | | | | |
|----------------------------------|---|------------|------------|------------|-----------|
| No. | Type of Problems | Females | Males | Total | Ranking |
| 1 | Boat tax | 26 | 20 | 46 | 4 |
| 2 | Market tax | 19 | 13 | 32 | 6 |
| 3 | Fish market trading | 8 | 7 | 15 | 13 |
| 4 | Lack of investment | 20 | 18 | 38 | 5 |
| 5 | Decrease of fish | 15 | 23 | 38 | 5 |
| 7 | Skin and skin | 13 | 4 | 17 | 12 |
| 8 | Thief (steal chicken and ducks) | 40 | 14 | 54 | 3 |
| 9 | No enough school and teachers | 19 | 7 | 26 | 9 |
| 10 | Natural destruction (flooding) | 15 | 8 | 23 | 10 |
| 11 | Health | 10 | 9 | 19 | 11 |
| 12 | Waste water (come from walking catfish culture) | 15 | 13 | 28 | 8 |
| 13 | Small road in village | 21 | 15 | 36 | 7 |
| 14 | Wave of ship or fishing | 15 | 15 | 30 | 7 |
| Total | | 248 | 166 | 552 | 52 |

Marketing Appraisal of Aquatic Production Per-urban Systems in Phnom Penh (Cambodia)

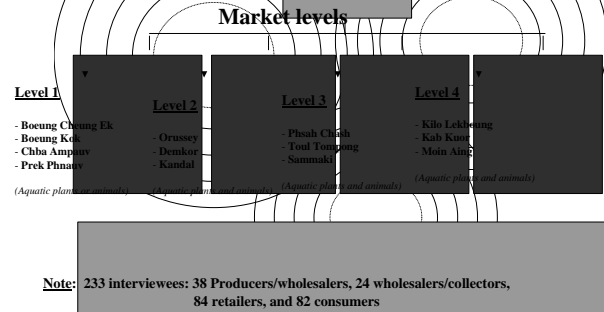


Activities in markets sold aquatic plant products



Activities in markets sold aquatic animal products

Market Methodology

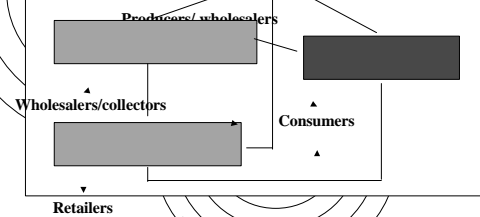


Market Result

Flows of Production to Consumers

- Aquatic plant and fish production from the communities inside and outside P.P.
- Collectors transport both productions to the market places where a variety of traders are involved in the buying and selling.
- market actors can play more than one role (see market channel)

Market Channel



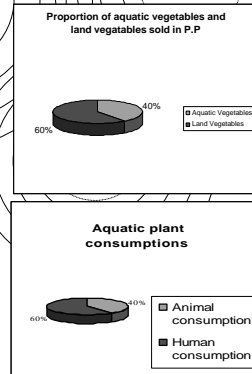
Additional labour

- Fresh products, producers/wholesalers need extra labour in addition to regular family labour.



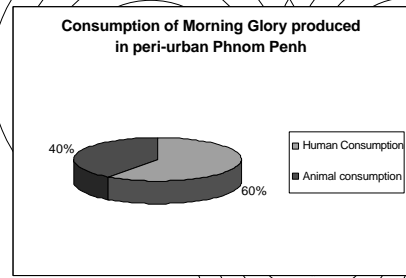
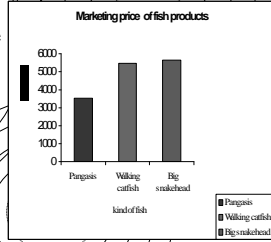
Aquatic Plants

- Aquatic plant products account for nearly half of the total sales of vegetables in PP.
- Morning glory is by far the most important aquatic plant product sold, the majority of which grown in wastes water.
- The large part (60%) of morning glory production is transported and sold outside the provinces.
- Morning glory is also used about 40% to feed pigs.



Fish

- Fish is a popular dish of the people in Phnom Penh
- Although wild fish products are more popular, some urban people cannot afford the high prices of these; as result, they rely on lower fish culture price in urban areas
- The major species are Pangasius, walking catfish and big snakehead
- Almost all of pangasius products from peri-urban sold outside PP.



Aquatic plants for human consumption



Aquatic plants for animal consumption



Major fish sold in markets

Participants SoS Meeting 04/12/03, RUA

- Local officers: 6
- Producers: 8
- Market Actors: 7
- Institutions: 6

| Researches and Actions | | | | |
|------------------------|--|--|--|---|
| Rank | Producers | | Local Officers | |
| | Action | Research | Action | Research |
| | To build medical centre to provide medicines especially for skin irritation and fever and train teach them on how to improve their health and sanitation | To reduce the impact of (organic) polluted wastewater on their fish and vegetable production | To treat the wastewater at source before it enter the lake | To introduce a system for the treatment and recycling of wastewater |
| | | PP NGOs to provide interest-free grants to improve their production | | |
| | | To build a well (groundwater source) in Beung Kok and Boeung Chheng EK | | |
| | | To solve the drug problem | | |
| | | To build a medical centre in the community | | |

| Rank | Producer | | Local Officer | |
|------|--|---|--|--|
| | Action | Research | Action | Research |
| | To reduce the volume of wastewater from the city and factories and to restore the quality and volume to the pre-2000 level | To introduce biological filters/constructed wetlands for water treatment and reducing the volume of water | To study toilets in Toul Chhru and Kbal Tomnup community in Boeung Chheng EK | To develop capacity among producers to directly export morning glory produced in Phnom Penh to other provinces and to adjacent Southeast Asian countries |
| 2 | To reduce the smell of wastewater | To reduce domestic violence | To prevent illegal fishing in the lake | To educate the market sellers on the health impacts of the use of chemicals to keep the vegetables, fish and other food fresh |

