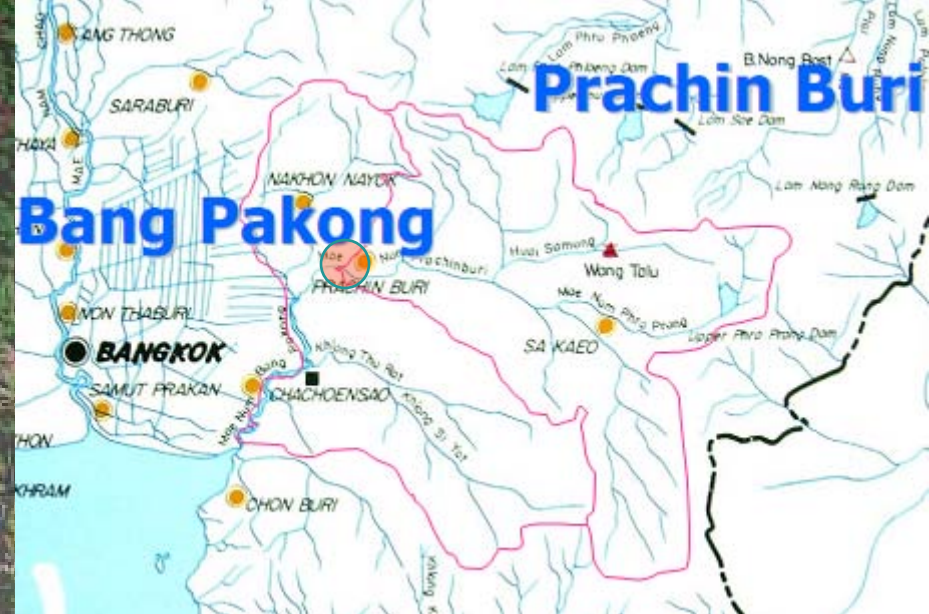


Bangpakong River Basin

There are two primary tributaries of the Bang Pakong river; Nakhon Nayok river, and Prachin Buri river which join at Ban Sang sub-district before its flow out to the Gulf of Thailand. The distance from Ban Sang to the river mouth is 122 km.



problem

- **Shortage of Water Sources for Activities and Economic Development**

Statement of the problem

- Some conflicts among different water users (such as in industrials and agricultural)
- Misunderstanding and distrust between government agencies and stakeholders about water resources infrastructure projects
- In Thailand don't have water allocation criteria.

Participatory Process

9 Meeting and 2 Workshop



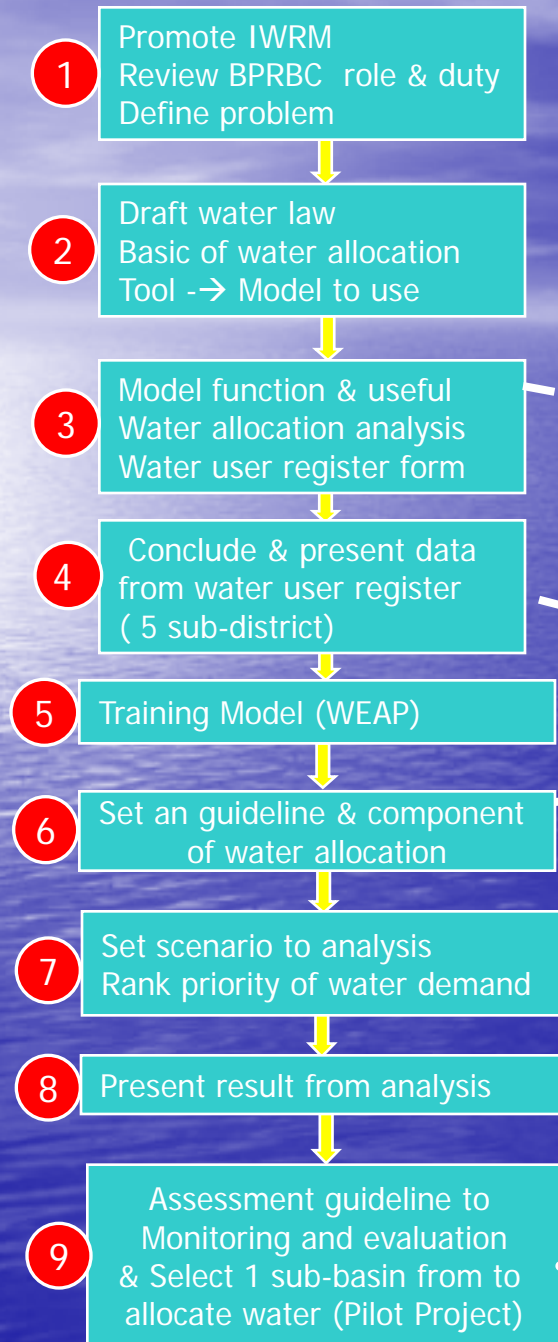
BPRBC = Bang Pakong River Basin sub-Committee

- The project will only be a catalyst that provides them with relevant knowledge.

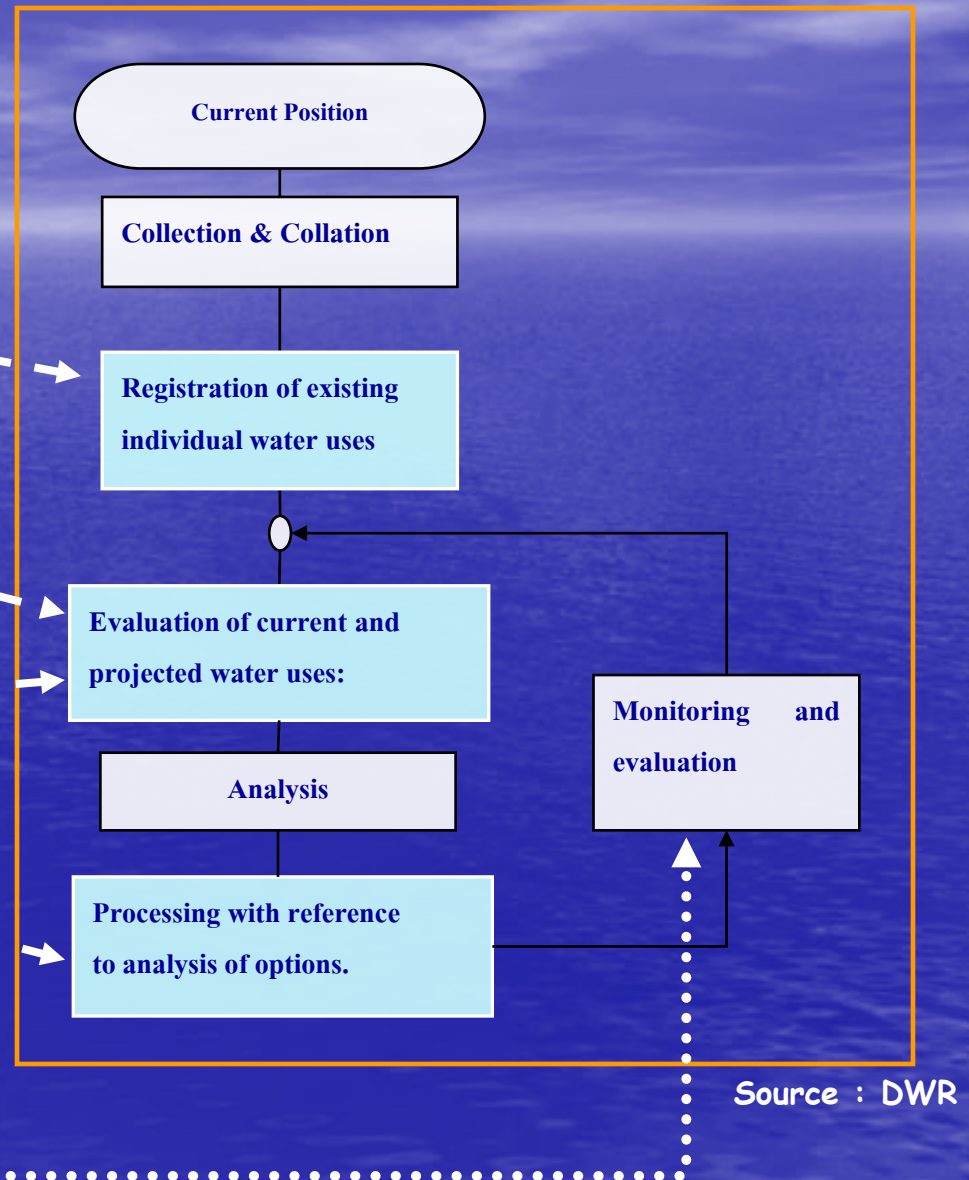
Therefore, when and if the BPRBC members create an experimental project for water allocation it will be an achievement of the project.

- The project also aims to **learn together with the people** of the river basin on **how the dialogue can add value** to the existing work that has been **done by the BPRBC**.

Participatory Process



Water allocation analysis Process



First meeting : 11 February 2005 @ BKK (MNRE)



ISSUE

Promote IWRM
Review BPRBC role & duty
Define problem

Target Group :

Member of sub-committee

30 person to participate

Representative of central government official = 10

Representative of provincial government official = 15

(Chacheongsao, Prachin buri, Nakon nayok and Srakeaw)

Representative of Sub-district government = 4

(representative 1 sub-district / 1 province)

Chair man of BPRBC = 1

1 Result & Conclusion

1. Most agency from 4 provinces of Bang Pakong did not recognize in their role of the committee.
2. Lacking of budget and personnel in the secretariat was a critical problem.

(secretariat : Water Resources Regional Office 6, Department of Water Resources)

3. Government organization are working in separate, need to coordinate and work together.
4. Promote and develop personnel in technical and knowledge base.
5. Don't has an equitable in water management.

other problem issue are : water quality, warning system, how to access data information about water resources for decision support.

Second meeting : 17 May 2005 @ Srakaew Province

ISSUE

Draft water law
Basic of water allocation
Tool -Model to use

Target Group :

Member of sub-committee and
specific in sub-district level from
4 province.



Objective :

1. To consider significant factor in water allocation.
2. Tool support for making decision in water allocation.

Method :

1. Lecture
 - Describe in draft water law
 - Describe water allocation concept, why it's necessary and model.
2. Discussion
 - Discuss in element of water allocation in draft water law

Result & Conclusion

1. If has a water law , will help BPRBC can have full mandate. (Support by law)
2. There also agree and accept that information and model is a useful technical tool to facilitate an efficient in water allocation.
3. Should study in detail of water right.
4. Study in detail of water user type from draft water law and how approach to permitting of water user.

Third meeting : 13-14 June 2005 @ Chacheongsao Province



ISSUE

Model function & useful
Water allocation analysis
Water user register form

Objective :

1. Advantage / useful of model use for water allocation.
2. To offer and make understand of water user register form.

Method :

1. Lecture
 - Tool use in water allocation : WEAP
 - Process of analyzing in water allocation
2. Discussion
 - How to fill in water user register form
 - Discuss and set representative to survey or collect data fill in water user register form.

Advantage of Model : as one mechanism tool.

The model (WEAP model) will be used to evaluate the impact on the basin scale water regime of these alternate development scenarios, enabling the committee to decide and interact with stakeholder communities (both the local community and the agencies and political representatives).

Results from the model can be used to better inform the dialogue between the stakeholders providing a quantitative basis for a shared vision of water allocation amongst the various stakeholder groups and sector agencies



■ Irrigation Project Area
▲ Existing Dam
△ Potential Dam

Bang Pakong-Prachin Buri River Basin Schematic Diagram

3 Result & Conclusion

1. An information used in as input model had been most were collected by consultants. It should be collected with a participatory process.
2. Participants wanted to test the model in some small sub-basin. Depend on easier for identification of data by the people of the areas.
3. Participants selects 5 sub-district to collect data from water user register. There are
 - T.Than Ngam ,T.Non C and T. Ban Sang Prachinburi Prov.
 - T.Ban Yai Nakon Nayok Prov.
 - T.Bang Pakong Chachoengsao Prov.

Fourth meeting : 23 Sep 2005 @ Nakon Nayok Prov.



ISSUE

Conclude & present data
from water user register
(5 sub-district)

Objective :

To present data & information from water user register form that survey by local organization.

(government/sub-district/water board/non-government)

Method :

1. Presentation

Show data from water user register form from 5 sub-district.

2. Discussion

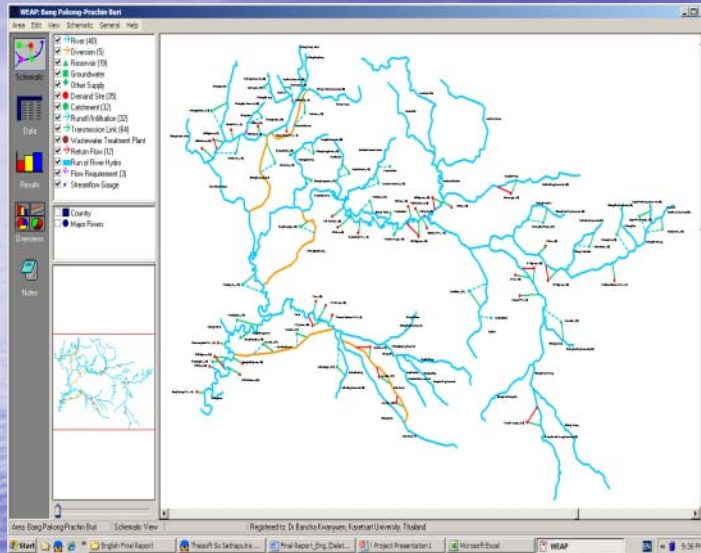
Discussion the experiences of collecting water data in 5 sub-district.

4 Result & Conclusion

1. The experiences of collecting in water user register form, it was found that this activities helped local people to raising awareness among villagers to think about their appropriate roles in managing water resources.
2. People can exchange their experiences and problem on water and environment that occurred in their area.

Fifth meeting :

17-20 Oct 2005 @ BKK



ISSUE

Training Model (WEAP)

Target Group :

- Working Group Technical Support (from Secretary official, DWR regional office 6)
- member of sub-committee (BPRBC)

Result

1. This meeting not more successful, because of to use the model should select user that have knowledgebase in water resource or related field. It is complex in technical.
2. Make some understand to sub-committee that in consider water allocation / water management should have working group technical support.

Sixth meeting :

24 Jan 2006 @ BKK

Objective

1. To assess the project and actual cooperation between government sector and people of the basin.
2. To identify guidelines for future implementation of the components of water allocation.

Result

1. The secretariat of the BPRBC should get more support from DWR and also from other government agencies in the basin.
2. Should comprise these agencies to help working on technical aspect.
3. Future activities of community involvement in water resource management, there are
 - surveying natural streams and canal for rehabilitation
 - development documentation of knowledge modules for dissemination.

Seventh meeting : 3 Feb 2006 @ Chachoengsao

Objective

1. To brainstorm opinions for selection of scenario for water allocation.
2. To identify priority in water allocation for sector uses in each sub-basin.



Result

Reference Scenario

- The reference is the base scenario the uses the actual data.
- The reference scenario objective is to help people learn what likely could occur if current trend continue and to understand the real situation.

Water Supply Scenario

The water supply scenario focuses on the development of potential irrigation area or reservoir.

Water Demand Scenario

- To set priorities of water demand in the basin which consists of domestic consumption, agriculture, industry, fishery, brackish fishery, livestock, flushing against salt water intrusion and environment conservation and tourism as shown in Table . The priorities derived from the opinions of the Bang Pakong River Basin Committee (BPRBC) meeting (on May,15 2006).
- It was the water allocation participating process of BPRBC.

Result con' t

Result of ranging from participant

the priority of water demand activities

No.	Water Demand Activity	Khlong Phra Prong		Khlong Phra Satung		Hanuman		Main Prachin Buri		Nakhon Nayok		Bang Pakong		Tha Lat		Upper Tonlesap	
		Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future
1	Domestic	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Agriculture	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Industry	4	5	4	5	4	4	4	3	4	4	3	3	4	4	4	4
4	Fishery	3	4	3	3	3	4	3	3	3	4	3	4	3	3	3	4
5	Brackish Fishery	3	6	4	6	5	5	3	5	3	2	3	3	3	3	3	5
6	Livestock	3	2	3	2	3	3	3	1	5	1	3	5	3	3	3	2
7	Salt Water Intrusion and Environmental Conservation	5	5	2	3	2	5	3	3	3	3	3	3	5	5	5	3
8	Tourism	5	3	5	4	3	2	4	4	3	3	3	3	3	4	3	3

Note : by vote

Eighth meeting : 15 May 2006 @ Prachin Buri

Objective

1. To presentation result from model.
2. To consider the matter of concrete implementation of water allocation.

Summary of Water Demand for Overall Basin in 2004

Sub-Basin	Basin	Water Demand in 2004 (MCM.)							
		Domestic	Agriculture	Industry	Livestock	Fishery	Tourism	Salt Water Intrusion and Environmental Conservation	Total
Khlong Phra Prong	Prachin Buri	4.649	33.606	0.278	0.077	0.000	0.135	0.272	39.018
Khlong Phra Satung	Prachin Buri	7.177	2.542	0.255	0.028	0.000	0.100	0.272	10.374
Hanuman	Prachin Buri	0.469	0.000	2.016	0.044	0.000	0.100	0.272	2.901
Main Prachin Buri	Prachin Buri	22.986	409.255	8.741	0.247	82.733	0.163	26.780	550.905
Subtotal		35.281	445.403	11.290	0.397	82.733	0.498	27.596	603.197
Nakhon Nayok	Bang Pakong	9.487	635.630	1.481	0.262	93.613	0.124	0.272	740.869
Bang Pakong	Bang Pakong	34.273	507.273	3.721	11.474	239.712	0.651	98.044	895.148
Tha Lat	Bang Pakong	5.632	104.170	0.38	1.738	9.430	0.302	0.272	121.924
Subtotal		49.392	1,247.073	5.582	13.474	342.755	1.077	98.588	1,757.941
Upper Tonlesap	Tonle Sap	21.654	89.104	0.037	0.043	0.000	0.110	0.272	111.220
Total		106.327	1,781.580	16.909	13.914	425.488	1.685	126.456	2,472.358

Summary of Water Demand for Overall Basin in 2024

Sub-Basin	Basin	Water Demand in 2024 (MCM.)							
		Domestic	Agriculture	Industry	Livestock	Fishery	Tourism	Salt Water Intrusion and Environmental Conservation	Total
Khlong Phra Prong	Prachin Buri	10.531	33.606	0.374	0.231	0.000	0.246	0.272	45.260
Khlong Phra Satung	Prachin Buri	18.073	43.182	0.343	0.084	0.000	0.173	0.272	62.127
Hanuman	Prachin Buri	0.469	111.300	2.715	0.132	0.000	0.195	0.272	115.083
Main Prachin Buri	Prachin Buri	61.914	409.255	11.773	0.737	82.733	0.349	26.780	593.540
Subtotal		90.986	597.343	15.205	1.184	82.733	0.963	27.596	816.010
Nakhon Nayok	Bang Pakong	24.179	635.630	1.995	0.781	93.613	0.294	0.272	756.764
Bang Pakong	Bang Pakong	93.524	507.273	5.012	35.423	239.712	1.553	98.044	980.540
Tha Lat	Bang Pakong	12.609	187.120	0.512	6.516	9.430	0.720	0.272	217.179
Subtotal		130.313	1,330.023	7.518	42.720	342.755	2.567	98.588	1,954.484
Upper Tonlesap	Tonle Sap	50.610	97.104	0.049	0.129	0.000	0.176	0.272	148.339
Total		271.908	2,024.470	22.773	44.032	425.488	3.706	126.456	2,918.833

Note : Domestic Use forecast by population growth.

Agricultures forecast by irrigation develop plan using mode to analyzel, etc.

Scenario Analysis and Results

Water shortage is a continuous problem (especially in dry season). The result shown in 2004, the water shortage was 12.27 MCM. and the water shortage was decreased to 12.20 MCM in 2005, because of the construction of **Tha Dan Dam**.

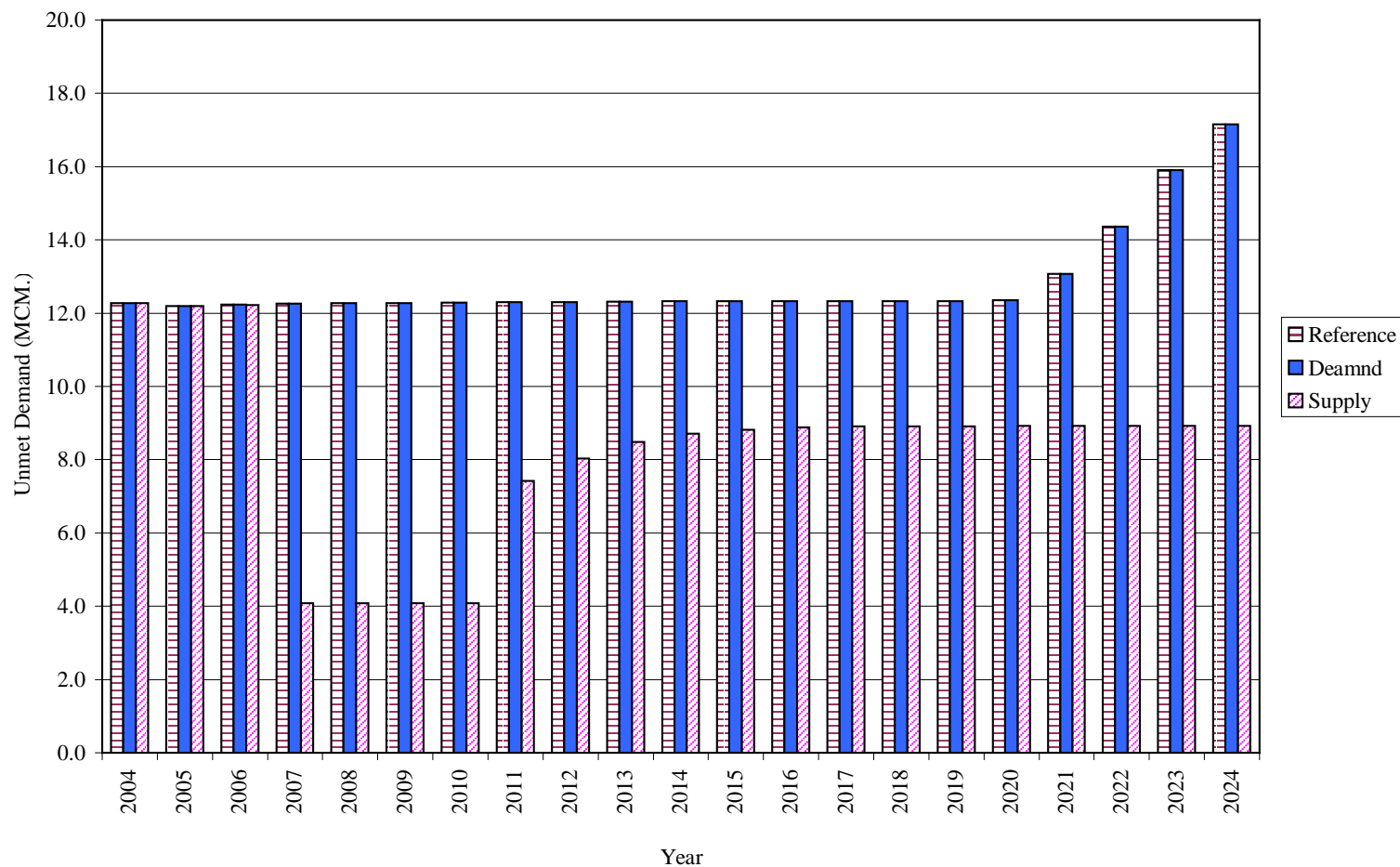
The water shortage forecast in 20 years and water demand scenarios will tend to increase to 17.16 MCM.

Water shortage in the water supply scenario was decreased from 12.20 MCM. in 2005 to 4.08 MCM. in 2009 because of the construction of new reservoirs.

In 2024, there will be an increase in water shortage by 8.92 MCM.

Result of Water shortage/deficits in each scenarios

Scenario	2004	2005	2009	2014	2019	2024
Reference	12.27	12.20	12.27	12.33	12.33	17.16
Water Demand	12.27	12.20	12.27	12.33	12.33	17.16
Water Supply	12.27	12.20	4.08	8.48	8.92	8.92



Major task for BPRBC is to develop a range of scenarios for the basin. These scenarios must match the probable development for the local communities in terms of population growth; economics and social aspirations and the desired environment in the basin.

Result

- This meeting the participants want to selected 1 sub-basin to implement of water allocation. It's Khlong Phra Prong sub basin was raised as a case.
(Klong phra prong sub-basin most occupation is agriculture but in downstream are many industries located.)
- The participants offer that should study and calculate the amount of compensation that farmers should get from this situation . (shortage due to water allocate to industrial)

Ninth meeting :

13 June 2006 @ Prachin Buri



Issue

Select 1 sub-basin to allocate water (Pilot Project) & Assessment guideline to Monitoring and evaluation.

Objective

To identify and discuss about the proposal for trial of Water allocation in Klong Phra Prong sub basin.

Result

- Water allocation of Khrong Phra Prong sub basin should be started and study the situation in case of dry year and normal year.
- RID must provide information to BPRBC (due to water supply are distribution from reservoirs that admit from RID)
- Monitoring such as measurement runoff flow, network data information etc. should do by community.

Conclusion

Conclusion

Lesson learn from the activity.

- Create and make sense of belonging in water resources and responsibility to use water.
- Create learning process for local people about water management, water allocation.
- From this project we have participatory process in Bang Pakong Prachinburi and Upper Tonlesap Basin that help and create some water user network in the area and some understand about water allocation or water supply.
- How should be there to access in water, and how they can participation to the government agency in water supply policy or water allocation.

Conclusion con' t

- Dialogue process can apply in participatory approach, and gain to understand in all participant. Reduce conflict among user, etc.
- Lack of knowledge base in subject of integrated water resources management , water allocation and water right . Difficult to access data information about water resources to use for decision support system.

The End & Thanks you