Understanding Multiple Uses of Water in China Using the MASSMUS Approach

Dr. Zhanyi Gao
National Centre for Efficient Irrigation Technology Research
June 1st, 2011
Distribution of large irrigation districts
Roles of Irrigation Schemes

1. Increasing crop yield

![Graph showing yield comparison between rainfed, irrigated paddy, and irrigated upland crops. The yield for irrigated paddy is significantly higher than rainfed and irrigated upland crops, with percentages of increase indicated.]
2. Industrial and domestic Water supply
3. Ecological System Improvement

In Northwest China, large areas of desert have become into oasis by development of irrigation.
4. Wetland Protection

Intake structure

Main Canal

Main Drainage Ditch

Wuliangsu Lake

Map of Hetao Irrigation District

The Yellow River
5. Hydropower Generation
6. Groundwater Recharge
7. Integrated Waste Water Use and Management
Canal lining save water and reduce groundwater recharge
Training on MASSMUS Methodology

1. June 14 to 25, 2010 by Mr. Daniel Renault
2. November 29 to December 9, by Ms. Robina Wahaj
Conceptual approach: MUS & IWRM

IWRM = Principles of water allocation among sectors at basin level.

MUS = Local practice by users/managers sharing the same infrastructure to produce more services
MUS and IWRM  *Extract of the WWF5 Istanbul Water Guide (2009) Item No 54*

Recognize the interrelationship between multiple uses and functions of water services and integrated water resources management.

Multiple uses practices are an inherent element of the Integrated Water Resource Management (IWRM) approach, which should be strengthened. Management agencies of large irrigation systems are often the only water services providers, notably during dry periods. Sound governance of these systems should be ensured to encompass the principles of IWRM and to recognize the needs of all stakeholders.
Steps for MASSMUS

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Field Visit
Application of MASSMUS in China

- Dujiangyan irrigation district;
- Fenhe irrigation district
- Qingshitan irrigation district;
- Shaoshan irrigation district;
- Tongshanyuan Irrigation District
Results of MASSMUS Application in China

1. Domestic Water Supply

![Bar chart showing domestic water supply](chart.jpg)

- **Dujiangyan**: Domestic water to small towns/villages
- **Fenhe**: Bulk water to cities
- **Qingshitan**: Domestic water to small towns/villages
- **Shaoshan**: Domestic water to small towns/villages
- **Tongshanyuan**: Domestic water to small towns/villages

**Legend:**
- DOMESTIC WATER
- Bulk water to cities
- Domestic water to small towns/villages
2. Water for Animal

MCM

Dujiangyan | Fenhe | Qingshitan | Shaoshan | Tongshanyuan
---|---|---|---|---
11 | 0 | 0 | 0 | 0
3. Water Hydropower

MCM

Dujiangyan  Fenhe  Qingshitan  Shaoshan  Tongshanyuan
4. Water for Industry

MCM

Dujiangyan
Fenhe
Qingshitan
Shaoshan
Tongshanyuan

- INDUSTRY
- Large Industry
- Small Industry and Business
5. Water for Fishery

- Dujiangyan
- Fenhe
- Qingshitan
- Shaoshan
- Tongshanyuan

Fishery in canals, streams and ponds
6. Environment flows
7. Water for Tourism

4=highly important

![Bar chart showing water importance for tourism]

- Dujiangyan
- Fenhe
- Qingshitan
- Shaoshan
- Tongshanyuan
8. Flood Protection Service

4 = highly important
MASMUSS help to improve planning for the modernization of irrigation schemes.
Improvement of MUS

• Further improvement of MASSMUS to suite the local condition, and consider the reuse of water, and linkage among sectors;

• Setting proper priorities of water supply for various water users, and strategies for avoiding water conflicts among water users.
Follow-up Action

- MASSMUS is an useful tool for comprehensive planning of modernization of irrigation schemes;
- For next 10 to 20 years China will modernize and rehabilitate of all large irrigation schemes and the major medium irrigation schemes. There is need and good opportunity to apply MASSMUS;
- The MASSMUS methodology and application results will be presented to decision makers. More training programs will be organized.
Thank you!