

VIETNAM; IWRM PRINCIPLES STRENGTHEN SUSTAINABILITY OF RURAL WATER SUPPLY AND SANITATION CASE #122

The case demonstrates that an integrated approach, based on the principles of integrated water resources management (IWRM), to rural water supply and sanitation provides a basis for sustainability, participation and positive impacts for the poor.

ABSTRACT

Description Half of the land area of Tien Giang Province in Vietnam is exposed to annual floods and the other half to saline intrusion. Traditional sources of domestic water - rivers, canals and ponds - are naturally polluted by alluvium acidity and salinity, and also by human/animal excreta and other wastes. Water related diseases have been very serious in the Province.

Tien Giang rural residents were inspired to develop their own water sources when they saw how UNICEF supported the drilling of wells to supply fresh and clean water to communities. They followed this example and dug individual wells, but without any resources planning. The first real impact was disastrous. The water quality from the shallow wells was so bad that the water was undrinkable. The wells were abandoned and their assets lost. A more serious impact was encountered when these abandoned wells were not closed properly, resulting in aquifer deterioration that affected a widespread area. The limited national and provincial budgets prevented rehabilitation and support to these areas.

The formulation of the National Rural Water Supply & Sanitation (RWSS) Strategy in 1998 provided a good opportunity for the Province to effect changes. Within the wider context of all economic activities, the affected communities were made aware of methods and approaches in harvesting water and well drilling that are cost effective and sustainable. After three years, Tien Giang Province manages surface and groundwater resources, ensuring water supply for 50% of the rural population (nationwide proportion direct access to potable water is about 35%). The Province and the communities worked through self-help, without any external support. Key components of the strategy included:

- A participatory approach, throughout project planning and implementation
- Technical support from the provincial government
- Appropriate financial policies for poor and difficult areas
- Establishment of water user groups, with the legal entity to hold, manage and operate facilities.
- Training and education for water user groups so that they are sufficiently able to make plans, choose technology, manage the water resources and the environment.

Lessons Learned

- RWSS is considered as a useful point of departure for poverty elimination and rural development, and achievements from RWSS help to motivate other social efforts.
- Information Education & Coordination (IEC) activities are very important to all levels including communities, local authorities, technical and credit agencies.
- Water resources for RWSS are of small quantity and dispersed in nature, and mainly related to groundwater, the monitoring of which is still very weak. Therefore this development must be included within integrated regional and basin planning, thus avoiding negative impacts to water resources and the environment.

Importance of case for IWRM

- The case shows how good planning leads to efficient use of water resources, and the integrated approach has led to a harmonious and equitable share of economic and social benefits among communities: all people have direct access to clean water for use, improving their life quality by their own contribution.
- The management of sanitation, domestic waste and rural waste production has contributed to good water quality and preservation of eco-systems.

Main tools used:

- A3.1: Investment policies;
- B1.6: Civil society institutions;
- B1.7: Local authorities;
- A1.2: Policies with relation to water resources;

BACKGROUND & PROBLEMS

Tien Giang province is located in Cuu Long Delta (the Vietnamese part of Mekong River Delta) in South of Vietnam. Two large rivers, Tien (Mekong mainstream) and Vam Co Tay, and a number of canals formed a dense (0.27km/km²) network of waterways. The population is 1,635 million, of which 85% are rural and 70% engaged in agriculture. The province lies along the main road connecting Ho Chi Minh City and south-western provinces, so its socio-economic conditions are quite well developed. The average GDP growth rate is approximately 9.5% per year, with business concentrated in agriculture, fisheries, processing industries, construction and services. People mainly live along the roads, rivers, canals and coastal lines, which have favourable conditions for economic and transport development.

1. CUSTOMS RELATING TO DOMESTIC WATER SUPPLY

Until the early 1980s, rural water supply at national level in Vietnam involved using local water sources and traditional manners.

In Tien Giang province, the main water sources for domestic use were groundwater and rainwater. Tien Giang has lowest rainfall compared to other provinces in the Cuu Long delta. Fresh water supply is problematic since half of the province area is exposed to annual flood while the other half to saline intrusion. The high speed of rural urbanization has resulted in the pollution of rivers, lakes, canals and ditches by human and animal's excreta and other waste. Furthermore, because of the customs to use raw water with simple alum deposit treatment, it is not uncommon for local people to suffer from water-born diseases such as enteric fever, diarrhoea, dysentery, sore eyes and gynaecological diseases. People used to simply think that clean water means odourless, tasteless and clear. Water has also traditionally been considered as an infinite natural resource, so consequently there has been little thought given to protecting it.

2. INITIAL DEVELOPMENT STAGE AND DERIVED PROBLEMS

In the early 1980s, during the Decade for Drinking Water and Sanitation, UNICEF commenced a supportive Program on Rural Water Supply and Sanitation (RWSS) in Vietnam. In 1990, UNICEF extended its support to Tien Giang province. Apart from providing materials, UNICEF also transferred well drilling and portable pump technology for the exploitation of groundwater resources. Up to 1998, UNICEF completed the support of 326 wells. Thanks to the UNICEF model, the people of Tien Giang were inspired to develop groundwater for domestic purposes. Currently, some ten thousands of UNICEF-style wells have been drilled by people themselves or by rented private drillers, supplying water to 31% of the population.

Amongst the key limitations of that spontaneous movement were resource information and planning; People could not identify appropriate aquifers which could provide good quality water. People just freely drilled wells to exploit water without conducting aquifer investigations and water quality tests. Therefore, a number of shallow wells did not have sufficient discharge, while others were acidic or saline and left un-used. According to a recent survey, some 20% of such shallow wells were abandoned. Since they have not been closed properly, flood water got in, infiltrated and polluted the groundwater sources and resulting to inevitable aquifer deterioration.

Together with the reforms which have been speeding up socio-economic development, demands on greater quality of life have emerged. Whilst people's needs on domestic water have increased quite quickly, local authorities proved to be slow in formulating suitable management policies. These were also the common outstanding problems encountered in the entire country at that time.

DECISIONS & ACTIONS TAKEN

In 1992, the Prime Minister issued the Directive No 200TTg on Ensuring Safe Water Supply and Sanitation for Rural Areas. In 1995, for the first time, Rural Water Supply item appeared in the annual national budget. In 1996, with DANIDA financial assistance, the National Rural Water Supply and Sanitation Strategy was

conducted, and then officially endorsed by the Government in 2000. In 1998, the Water Law was adopted and gave priority to the use of water resources for domestic purpose. The law also indicates the principle of utilization and protection of water resources in a sustainable manner.

1998 was considered a landmark for Tien Giang province, when the following decisions were made:

1. PARTICIPATION IN THE FORMULATION OF THE NATIONAL RWSS STRATEGY

The strategy was only approved by the Government in 2000 but in the formulation process, awareness of local authorities and agencies and people gradually improved and the strategy has been step by step brought into reality.

2. PREPARING THE PROVINCIAL RWSS PROGRAM

Concurrently to the National RWSS Strategy, a National RWSS Program was also set-up. It was one of the seven priority national programs, apart from others like poverty alleviation, employment generation etc. In Tien Giang, the Provincial RWSS Program had the objective to target 80% coverage of water supply and 50% coverage of hygienic latrines by 2005, thus contributing to poverty alleviation and rural development. RWSS components included of domestic water drinking, cooking, bathing and assurance of water supply for schools, hospitals, markets etc.

3. ISSUING LEGAL DOCUMENTS

The 1998 year was turning point for Tien Giang. It was the year that the province began to address the problem of over-exploitation of the water resources with a legislative system. The first legislation was Directive 16/CP-UB from the Provincial People's Committee to regulate the overall RWSS development. The next was a series of documents related to RWSS management, exploration, exploitation, service delivery and business; and issuance of permits to explore and exploit groundwater.

The formulation of projects and investment in any pipe-water-supply structures have had to comply with the following steps (a little more description of the steps would be helpful e.g. the authorities issue a land use right certificate. The people responsible for conducting the project must apply for investment funds):

- Collecting people suggestions through direct meetings.
- Establishing the Management Unit for each project.
- Application for investment.
- Application for drilling to explore underground water (if the water has good quality, an exploitation permit will be issued).
- Land use right certificate.
- Layout of structural area.
- Preparation and submission of investment project.
- Business registration license (in case of business entity).

4. SPECIFIC DECISIONS

A/ Assessment of water resources in province area

Based on groundwater availability as the main condition, Tien Giang province may be divided into 6 areas for rural water supply:

- Area 1: to use rainwater and surface water from canals, ditches (already salinity controlled). Priority is given to pipe-water-supply stations using surface water serving 1,000-5,000 people. For scattered households, tanks and jars to store rainwater are applicable.
- Area 2: to mainly use rainwater, to accumulate fresh water in excavated large ponds as water sources for pipe-water-supply systems.
- Area 3: in areas where large reserve of groundwater required only iron treatment, to use pipe-water-supply systems with the scale of 1,000-5,500 people and also under 1,000 people.
- Area 4: to use both surface and groundwater sources.
- Area 5: to use only surface water and that needed to be treated.

- Area 6: to mainly use rainwater, but supplemented by deep groundwater.
- Basing on the above water resources allocation, Tien Giang worked out options on water supply till 2010: To rehabilitate and upgrade existing deep wells, connect them in order to expand the serving scope.
- To construct new structures, with priority given to large scale pipe-water-supply systems in densely populated areas with potential for rapid economic development.
- To construct new, small-scale pipe-water-supply systems with proper water treatment.
- To develop scattered structures for small groups of people suffering from difficult economic conditions and water shortages (It is not quite clear what this means).

B/ Application of approaches recommended by the National RWSS Strategy

- Application of demand responsive approach, in which communities will be involved from the early planning stages and will make their own decisions.
- Local authorities and specialized agencies will support and advise communities technically.
- Facilitating the setting-up of water user groups that have legal entity to invest, to borrow loans and to run their own water structures.
- Information, education, communication and training of water user groups on planning, selecting technology, and managing water resources and the environment.

C/ Launching appropriate policies

Funds mobilization policy: Tien Giang has paid attention to some following forms of mobilizing funds:

- Cooperatives: the principle of, “equal contributions - equal benefits” is applied.
- Stocks: profit-sharing is based on stocks. The form is easy to mobilize funds from people, particularly among rather well-off households.
- Mobilization of labour and available materials is applied to poor households.
- Credit: this is an important and long-running source. However, RWSS is a low profit and long-term cost recovery business. Therefore credits must be medium and long-term with favourable interest rates for people to afford.

The provincial authorities has also supported the mobilization of funds by a series of incentive policies such as tax reduction, long-term land use, simplified administrative procedures, stable water price, technical support and credit procedure support. The funds needed are quite large: to target coverage of 95% by 2010, a budget share is expected with contribution from people of 60%, government 31% and external aids 9%.

Training program: in order to manage and operate the structures in a sustainable manner, the training program has to focus on the following aspects:

- Capacity to prepare and manage plans
- Information, education, communication skills
- Project formulation
- Financial planning
- Project monitoring and evaluation
- Technology transfer
- Technical consultancy

The program also includes several related policies, such as those relating to social and rural development, population and family planning, technological solutions and institutional strengthening.

OUTCOMES

1. MEETING DEVELOPMENT DEMANDS

Tien Giang has not received any external assistance after the UNICEF program has been completed in 1988. The province was not considered poor enough for eligible to the Government poverty alleviation support

program. Through its own rational investment policies, Tien Giang managed to develop 415 pipe-water-supply structures by the end of 2002, an increase 320% compared to the 1998 figure. The rural water supply coverage reaches 65% of the population, compared to 31% in 1998. 90 billion dong (about USD 6 million) has been invested to the development, out of which 44% is from communities, 17% is from private investors, 29% is from state-owned companies and only 10% is from the national budget.

Though the number of structures increased quite quickly, Tien Giang has still been able to responsibly manage the exploitation of water resources. In the Tien Giang area, there are no longer illegal users of water resources. All drilling activities without permits are considered illegal and are handled accordingly.

2. COMMUNITY PARTICIPATION AND WATER USERS ORGANIZATIONS

People participate in the early stages of project identification through meetings, where all project information such relating to water sources, project scope and fund mobilization is disseminated. These matters are publicly discussed among people and finally agreed upon under a Minutes of Understanding form, in which participants all sign off. Water users are then voluntarily grouped within Cooperative or Water Cooperating Unit. Cooperatives and cooperating units are recognized as legal entities eligible to borrow credits from banks for their operation. They get a business license, pay tax, manage funds and are accountable to laws.

A Cooperative Unit Plenary Meeting adopt operation rules, elects a Project Management Board, which is subsequently endorsed by local authorities. The Management Board is in charge of supervising the construction, running the structures after completion, collecting water fees, accounting costs and profits, paying or asking for new contribution through its periodic financial reports. Cooperative Unit members have the rights to replace or revoke the Management Board members. Provincial line agencies do not intervene in their businesses, but only conduct line functions of monitoring and controlling the exploitation of water resources, supervising the implementation and providing technical support upon their request.

3. TECHNICAL SUPPORT BY THE LINE AGENCY

The Provincial Center of Rural Water Supply and Sanitation is the state-owned line agency of the Provincial People Committee in the RWSS management and monitoring, as well as providing technical support to community-invested structures. The center has the duty to provide sample designs of water supply structures for people's reference and also to help in project formulation upon request. The center sends technicians to the sites and helps with construction supervision. The center also takes care of training activities to be organized for O&M workers and other managers.

4. FINANCIAL POLICY AND FINANCIAL SUPPORT FOR THE POOR AND DIFFICULT AREAS

As guided by the National RWSS Program motto (Perhaps should say what the motto is?), Tien Giang allocates budget priority to poorer areas, areas facing water source problems, and to supplement large-scale structures where people's contribution is not enough to fully cover the investment. Furthermore, Tien Giang has encouraged the involvement of wealthier households and enterprises in investing in water supply services for poorer people, with a gradual return on investment through the collection of monthly water fees. Households and enterprises investing in poor areas are offered favourable treatment, such as exemption or reduction of land tax, turnover tax, land use priority etc. Poorer households that can not afford cash contributions, can contribute labour and local materials.

The financial policy is also reflected through the role of the Finance Department that stipulates that the average price of water should be Dong 2,000/m³ thereby guiding business's balance sheets. Due to appropriate financial policy, Tien Giang has been able to increase the participation of communities, and their role has been brought into full play. Thus, it has created a competitive but fair investment environment, ensuring that integrated water resources management is undertaken seriously and in full compliance with laws.

5. TRAINING ON PLAN PREPARATION, INTEGRATED WATER RESOURCES MANAGEMENT AND ENVIRONMENTAL PROTECTION

The Provincial Center of Rural Water Supply and Sanitation was assigned to support cooperatives and cooperating units technically in the field of RWSS. In coordination with other branches and sectors in the

province, the Center organized training courses and fostered knowledge on water supply and sanitation among cooperatives' and cooperating units' members. Those training courses would equip knowledge on water and sanitation, methods to formulate projects, plans, cost estimations, technical norms for construction, O&M of the structures...

The Science, Technology and Environment Department guided the test of water quality and options to effectively exploit water resources and to protect water as well as natural environments.

6. RELATIONSHIP BETWEEN RWSS MANAGEMENT AND IWRM

Presently, the water resources management from provincial down to commune levels is governed by Directive 16/UBND. All structures have its monitoring files kept by the line agency. Therefore, only feasible structures can be developed and operated. Thanks to good management of water resources, Tien Giang RWSS has been very well developed. As noted above, the number of pipe-water-supply structures in 2002 was 3.2 times higher than in 1998, resulting in a 34% increase in the number of people with access to clean water. Tien Giang province's high coverage rate now ranks second in Cuu Long Delta and ninth countrywide. This achievement is due to the following factors:

- The careful management of the exploitation and use of water. The O&M of structures are used in rational and economical manner.
- The consideration of the role and responsibility of people towards RWSS structures so that people feel responsible for protecting them.
- The securing of sufficient financial sources for operation and reparation whenever necessary.
- The introduction of appropriate technologies ensures effective exploitation while sufficiently conserving water resources. The improvement in the knowledge and skills of managers and technical staffs.
- Strict inspection, examination and supervision of the exploitation and supply of water.
- The exercising of incentive policies calling for voluntary contribution and protection of water resources.
- The education of people in relation to the conscious compliance with legal and technical regulations relating to RWSS, such as limiting shallow and scattered wells, and avoiding illegal drilling.

MAIN LESSONS LEARNED

(These should be general lessons that can be used by other people. Please see example below...)

The conclusion that can be drawn from the practical management of RWSS in Tien Giang is that successes were gained through applying numerous principles set out in the National RWSS Strategy and the Law on Water Resources. Below are some lessons learned:

- Water is considered as a socio-economic good and can be traded. Tien Giang is the first province that formed a preliminary domestic water market, under the form of mobilizing various capital sources from people and state budget, encouraging all economic entities, including private enterprises, cooperatives, cooperating units and state agencies, to join in the investment. (This is not really a lesson. It is more like a statement. What you could write is something like; "This case illustrates that it can be beneficial for water to be traded as a socio-economic good by forming a domestic water market that mobilises capital and encourages development.)
- People have the right and are encouraged to contribute their own funds to serve their own family's demands and also to make profits. In doing that, they have to comply with procedures and technical norms in the exploitation and utilization of water resources, thus ensuring sustainability.
- Regulations on RWSS business for both organizations and individuals are clearly stipulated, i.e. technically capable, sufficiently equipped and funded for construction and operation of the structures and available with sufficient human resources. Investors have to run business under the supervision of line provincial agencies and to comply with uniform regulations on integrated water resources management.
- The provision of uniform and sample designs, including information on technical norms, technology, price, materials, equipment, operation rules, supply sources etc., did serve as basic references for people

decision making. Thanks to these sample designs, investors could calculate investment costs and avoid wastes, norms were uniformly applied, which facilitated management activities.

- The open statement of uniform ceiling water price in the province has served as a base for investors and users to negotiate and come to an agreement of a rational water price for mutual benefits.
- The enhancement of RWSS information, education and communication activities contributed to change people's behaviour and increase water demands. Through these activities, people are not only aware on clean water and sanitation, but also other knowledge related to the culture, the society and the central and local socio-economic development policies.
- The increase of clean water coverage was the entry point for socio-economic development and successful implementation of poverty alleviation program in Vietnam.
- The management and exploitation of water resources for rural domestic use should be integrated with others to limit water shortages. Since the volume of water domestic use was not large, and dispersed in nature whilst monitoring capacity is still weak, the uniform management in line with planning and the coordination between programs and projects has restrained negative impacts to water resources and the environment.

CONCLUSION

Experiences and successes gained at Tien Giang relating to the management and exploitation of water resources have shown that development has to be done synchronously in the whole process from planning, investment to O&M stages. A feasible plan appropriate with all exploitation, distribution and utilization activities has to be figured out. Moreover, RWSS activity cannot be separated from other plans; it should be coordinated with other programs such as irrigation, rural electrification, resettlement, health care and education, in order to be successful. As a result, there is uniformity between sectors in harmonizing exploitation of water resources for different purposes and ensuring that socio-economic benefits be equally divided in the community. All people can access clean water and enjoy sanitary conditions, which are basic factors to improve the quality of life of rural habitants by their own contribution.

The good management of the RWSS program is also considered as a decisive factor in the uniformity and integration of water resources management at provincial level. The program further enhanced the socialization and decentralization policies down to commune, village and community levels, greatly contributing to social stability and rural prosperity.

Contacts

First contact: Dr. Le Van Can, Director
Center for Rural Water Supply and Sanitation.
73 Nguyen Hong, Hanoi, Vietnam
Telephone: (84-4) 835 5821 Fax : (84-4) 835 5964
Email: lvcan@cerwass.org.vn

Second contact: Mme Do Hong Phan, Director
Centre for Resources Development and Environment
Chair, Technical Advisory Committee, Vietnam Water Partnership
C11 Ha Thuy - Hoang Cau, Hanoi, Vietnam
Telephone: (84-4) 511 4173 Fax: (84-4) 563 4809
Email: redeen@hn.vnn.vn