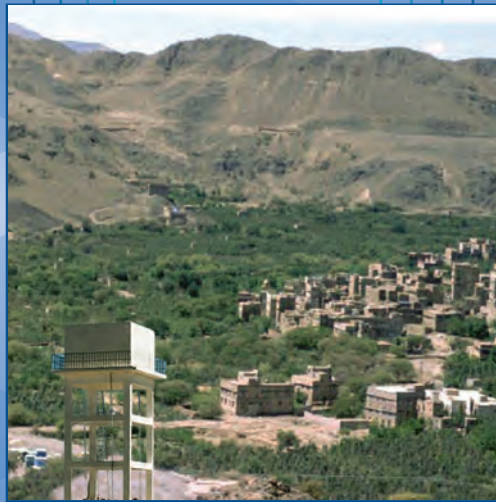
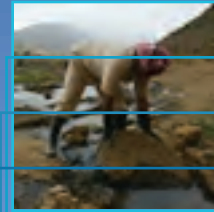


YEMEN'S WATER SECTOR REFORM PROGRAM – A POVERTY AND SOCIAL IMPACT ANALYSIS (PSIA)

HIGHLIGHTS AND RECOMMENDATIONS



OCTOBER 2007

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Ministry of Water and Environment | Ministry of Agriculture and Irrigation





Republic of Yemen

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In the name of Allah, the Beneficent, the Merciful

**“Say: Have ye thought: If (all) your water were to disappear into the earth,
who then could bring you gushing water?”**

Su’rah LXVII – Al-Mulk (the Sovereignty) Verse XXX

Table of Contents

Acknowledgements	ii
Acronyms	iii
Six Key PSIA Messages	1
1. Reforming Yemen’s water sector	2
2. Main findings on NWSSIP impacts	5
3. The program for water resources management and irrigated agriculture	6
A. Objectives and major components of the reforms	6
B. Improving NWSSIP implementation in water resources and irrigated agriculture	8
C. Improving the impact on the poor of the reforms in water resources and irrigated agriculture	14
D. Addressing political economy and institutional constraints	14
4. The program for rural water supply and sanitation	16
A. Objectives and major components of the reforms	16
B. Improving NWSSIP implementation for rural water supply and sanitation	18
C. Improving the impact on the poor of the reforms in rural water supply and sanitation	22
D. Addressing the political economy and institutional constraints	22
5. Main message of the PSIA	23
6. Next Steps	23
Bibliography	25
Annex 1: The PSIA Matrix - Key Recommendations and Stakeholder Responses for implementation	29
Annex 2: Map of Yemen	34

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Acronyms

AFPPF	Agriculture and Fisheries Production Promotion Fund
AREA	Agricultural Research and Extension Authority
CWRAS	Country Water Resource Assistance Strategy
DIA	NGO involved in rural water supply and sanitation programs
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization of the United Nations
GARWSP	General Authority for Rural Water Supply Projects
GSCP	Groundwater and Soil Conservation Project
GTZ	Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) (German Technical Cooperation)
HBS	Household Budget Survey
IIP	Irrigation Improvement Project
IWRM	Integrated Water Resource Management
JSDF	Japanese Social Development Fund
KfW	Kreditanstalt fuer Wiederaufbau (German Development Bank)
LC	Local Corporation
LWCP	Land and Water Conservation Project
MAI	Ministry of Agriculture and Irrigation
MDG	Millennium Development Goal
MoLA	Ministry of Local Administration
MoPIC	Ministry of Planning and International Cooperation
MWE	Ministry of Water and Environment
NWRA	National Water Resources Authority
NWSA	National Water and Sanitation Authority
NGO	Non-governmental organization
NPS	National Poverty Survey
PAWS	Programme Aid to the Water Sector (Dutch financing)
PPP	Private Public Partnership
PIP	Public Investment Program
PRA	Participatory Rapid Appraisal
PWP	Public Works Project
SBWMP	Sana'a Basin Water Management Project
SFD	Social Fund for Development
SURWAS	Support to Rural Water Supply and Sanitation (closed Dutch project)
WTO	World Trade Organization
WUA	Water User Association
WUG	Water User Group

Yemen's Water Sector Reform Program

A Poverty and Social Impact Analysis (PSIA)

Highlights and Key Recommendations

1. This paper presents the highlights and key recommendations of a Poverty and Social Impact Analysis (PSIA) of Yemen's water sector reform program. PSIA is the analysis of the distributional impacts of policy reforms on the well-being or welfare of different stakeholder groups, with a particular focus on the poor and vulnerable. PSIA also examines vested interests to assess and address the political economy of reform, issues of sustainability and risks in policy reform. Among other analyses, the study builds on the Yemen Country Water Resource Assistance Strategy (CWRAS, World Bank 2005a) and the Country Social Analysis (CSA, World Bank 2006a). The PSIA recommendations, which address the key messages, will be implemented through the NWSSIP Update and operations.

Six Key PSIA Messages

1. Decentralized water management, a stakeholder partnership approach and secure water rights may gradually reduce the rate of groundwater overdraft. However, the pace of change at the local level is extremely slow. ***Institutional reforms in water resources management and irrigated agriculture should be pursued and accelerated. More resources and a long term commitment to reducing groundwater overdraft are essential.***
2. Farmers should be able to reduce water use whilst at least maintaining their incomes, but getting more farm income per drop will plainly require considerable effort beyond what is currently being done. ***The most emphasis has to be given to the range of measures in NWSSIP designed to promote water productivity in agriculture, particularly for poorer farmers.***
3. The top priorities in rural water supply and sanitation have to be mobilizing all concerned behind a single reform program in preparation for a sector wide approach, and improving GARWSP's institutional performance by completing decentralization and paying attention to the neglected but important poverty focus and social aspects. ***Implementation of reforms in rural water and sanitation needs to be seriously speeded up*** if Yemen is to have hope for increasing access of the rural poor to affordable and sustainable safe water on a scale large enough to attain its NWSSIP and MDG targets.
4. The key to success of NWSSIP implementation overall will be constant and equitable application of both regulation and incentives. More broadly, ***ownership of NWSSIP needs to be strengthened so that the nation supports a water sector reform seen as both beneficial and fair.***
5. The sequencing and dosage of reforms and support are important. Prices have gone up, some water is being saved, but so far, reform has not been pro-poor, and corrective action is required if pro-poor outcomes are to be achieved. ***The water sector reforms are best implemented as a reform package.***
6. ***There is the need for (massive) support to improving productivity to restore incomes, particularly for the poor.*** This is the most important message of this PSIA.

Source: Authors' compilation

1. Reforming Yemen's water sector

2. **Water and poverty.** Yemen is a poor country and most of its people are poor or very poor. Water problems are an important component of poverty. There is an anti-poor disparity between better off and poorer Yemenis in terms of both access to safe water and sanitation, and the price paid for it. The vulnerability of poorer people is greater, and the share of their income directed to getting adequate water is higher. In agriculture, ownership of a water source is correlated with higher income, and development of groundwater resources in recent years has contributed to growing income disparities as the better off have been able to capture the lion's share of the resource. The health consequences for the Yemeni population are severe: for instance, mortality of children under the age of 5 years is twice that of other countries in the MNA region, and half of these deaths are due to diarrhea. The gender and educational enrolment impacts are also considerable, with women and girls spending large parts of each day fetching water.

3. **The water sector and its institutions.** Yemen has no permanent rivers and depends on rainfall, floodwater diversion and groundwater extraction as its water sources. Over 90% of water is used in agriculture and the rapid development of irrigation in recent years has led to over-extraction of groundwater and a rapid fall of aquifer levels in many areas. Yemen has set up a complex structure of institutions to manage the water sector. The recently created Ministry of Water and Environment (MWE) supervises resource management through the National Water Resources Authority (NWRA) within the 2003 Water Law. It also oversees water supply and sanitation service delivery through the National Water and Sanitation Authority (NWSA), local water supply companies, and the General Authority for Rural Water Supply Projects (GARWSP). The Ministry of Agriculture and Irrigation (MAI) has responsibility for irrigation and watershed management. Donors, who contribute largely to capital investment in the sector, exert considerable influence over policy making. However, despite this impressive array of public agencies, it is *private agriculture* which has almost complete control over water resources. At present, irrigated agriculture is depleting the resource, with negative impacts on equity, sustainability and availability of water for transfer to domestic and industrial use.

4. This institutional structure has four critical implications for policy. First, ***the behavior of irrigating farmers is the key to the success of reforms*** in water resources and irrigated agriculture. Management approaches have to be cooperative rather than controlling, particularly in the context of Yemen's weak formal governance structures. Second, ***the overlap between the public sector and private water use is limited***, confined to some public investment which has affected few irrigated farmers to date. The challenge of scaling up public involvement is thus enormous, especially given weak implementation capacity in most parts of the sector. Third, ***the most powerful influence on use of water in agriculture is the incentive structure***, which -at least until recently- promoted expansion rather than efficiency and intensification. Reforming the incentive structure is the single most effective way to improve water resources management. However, unless price reform is accompanied by investment, especially in efficient irrigation and low-cost rural water supply, there is a risk of negative impacts on rural incomes and their distribution. Fourth, ***poor coverage and low sustainability of safe water and sanitation schemes in rural areas have negative impacts on economic productivity and well-being***. More investments are needed in low cost rural water supply and capacity building for community or private schemes to supplement public efforts, especially in remote, mountainous areas.

5. **Political economy of water and vectors of change.** After decades of promoting rapid water development, government attitudes began to change in the 1990s, driven by water shortages and fiscal crisis. In the same period, the state began playing a more catalytic role in development generally, adopting a poverty alleviation mandate. Other stakeholders also began to be motivated by

conservation or by desire for better services. By the late 1990s, these factors had combined to move Yemen's water policy from its "unregulated development and expansion phase" to its "management phase". Awareness and the consequent impulse for reform have proved uneven and slow maturing, but have been helped along by "decisive moments", like the Ta'iz water crisis of the mid-1990s, when the city literally ran out of water for over a month. There have been constraints to reform; in particular, vested interests which had benefited from the earlier fast development of water emerged as potential losers from the changes. Dealing with the "political economy of reform" has required time, dialogue, opportunism, incentives, and leadership.

6. The NWSSIP reform program. In 2005, the Government of Yemen adopted a National Water Sector Strategy and Investment Program (NWSSIP) intended to address the three main problems in the water sector: (1) the problem of low water resource availability, groundwater overdraft, and the vulnerability of irrigated agriculture; (2) inefficient service, inadequate coverage and high fiscal subsidy of water supply and sanitation in urban areas; and (3) low coverage and poor sustainability of water supply and sanitation in rural areas. The reform program is summarized in the attached *NWSSIP Reform Policies at a Glance*.

7. The need for PSIA. NWSSIP is now being put into action, but implementation remains hesitant, in part because of the political economy constraints. Government and donors are keen to accelerate NWSSIP implementation and to use the NWSSIP process as the basis for program lending. Hence, government and donors agreed that some of the major reforms should be the subject of PSIA analysis in order to learn as much as possible about their impacts, particularly on the poor, and to assess how to improve implementation and address political economy of reform constraints. Stakeholders agreed that PSIA should cover only reforms in water resources and irrigated agriculture, and in rural water supply and sanitation. Urban water and sanitation issues were thus not covered, as implementation is ongoing for several years, and stakeholders have a good grasp of the reform's economic and social impacts and how to deal with them.

8. The PSIA process. The PSIA process for Yemen's water sector reform program was initiated in 2005 as a joint exercise between Yemen and its external partners. It builds on the findings of the Yemen Country Social Analysis. The study took a *multi-sectoral and spatial perspective*. It purposively selected sites for in-depth study by a multi-disciplinary team that combined perspectives of integrated water resource management, socio-institutional development, political economy of reform, and local context. The team conducted analysis and policy dialogue in parallel. An interim report was produced in June 2006. A main mission was undertaken in November and December 2006 to conduct stakeholder consultations, a design workshop, and fieldwork. A draft report was circulated in English and Arabic to a wide audience in Yemen. A second workshop and consultations were held in March and April 2007 to discuss preliminary findings. Stakeholders welcomed the study as an important tool for evidence-based decision-making for the reform. They validated the findings and most of the recommendations, and helped develop the PSIA Matrix (see Annex 4). The team incorporated stakeholder feedback and finalized the report that was peer reviewed by Bank and GTZ staff. In September 2007, the team held a third stakeholder workshop and consultations to discuss the PSIA Matrix implementation. All stakeholders stressed the need to operationalize the study to overcome the identified constraints and enhance NWSSIP's equity focus. They identified specific PSIA priority actions for implementation through operations and the NWSSIP Update in order to implement the NWSSIP messages and achieve the MDGs.

NWSSIP Reform Policies at a Glance

Groundwater resources and the challenge of irrigated agriculture

Decentralized management and stakeholder partnership approach

- decentralizing to basin water committees within basin plans
- implementing basin plans on an integrated water resource management basis
- promoting water user associations and self management at the local catchment level

Recognizing existing rights and controlling expansion

- recognition of farmer use rights
- implementation of the licensing, regulation and other provisions of the Water Law
- national water well census and water resources assessment.

Revision of the economic incentive structure for groundwater use

- raising the diesel price and freeing up agricultural trade, including for *qat*
- possible recognition of tradable water rights (pilot project in Ta'iz)
- improving water productivity through research, extension and subsidies to investment

Urban water supply and sanitation

Creating efficient and accountable utilities

- completing the decentralization and corporatization process
- establishing a regulatory function
- phasing in PPP through management contracts and “Utility Support Programs”
- developing outsourcing to reduce over-staffing.

Investing in increasing coverage, with priority to the poor

- maintaining levels of government and donor resource allocation
- developing criteria to prioritize investments that target the poor
- introducing lower cost technology.

Making water and sanitation services affordable

- water charges based on cost recovery, gov't pays for new schemes, replacements etc.
- revising the block tariff system with a pro-poor objective
- the poorest of the poor to be dealt with by charity and social safety net

Rural water supply and sanitation

Rapid expansion of coverage with a pro-poor emphasis

- establishing a sector strategy and planning for rapid expansion of coverage
- increased resource allocation to rural water supply and sanitation
- transparent investment application process and decentralized approval system
- NGOs to be encouraged to participate.

Making services inclusive, affordable and sustainable

- priority to low cost technology
- demand responsive approach and community based self-management
- initial capital subsidy, user associations to be self-sustaining financially thereafter
- gender to be mainstreamed
- sanitation to be obligatory
- water to be sourced with NWRA support and clearance

Improving implementation

- setting up a “central office for sector reform”
- decentralization of GARWSP to governorate branches
- agreement on common approaches to be followed by all entities operating in the sector
- community contracting, wherever possible

2. Main findings on NWSSIP impacts

9. NWSSIP is a detailed and dense program. Complex impacts were anticipated, both in terms of water resources conservation and of distributional impacts on the population. Although it is too early for a full evaluation, the PSIA process (i.e. parallel analysis and policy dialogue) provided some preliminary indications regarding the assumptions that underlie NWSSIP and its expected impacts.

10. First, it was anticipated that the measures provided in NWSSIP for decentralized water management, a stakeholder partnership approach and secure water rights would gradually reduce the rate of groundwater overdraft. This impact will clearly be felt only in the long term and it is not yet proven. There are, however, indications that where the approach is being implemented on any scale, there is an improvement in water governance. The signs include increased awareness and cooperation of the population, fledgling basin committees and plans, the beginning of regulation and a growing water user association movement - all of which are promising signs. However, **the pace of change at the local level is extremely slow, and more resources and a long term commitment are essential**.

11. A second assumption was that farmers will be able to reduce water use whilst at least maintaining their incomes. So far, there is little empirical evidence available. The evidence that exists, however, suggests that farmers with market access can reduce water use and maintain their incomes *if they invest in water saving technology*. There are, however, huge barriers to realizing this potential (e.g. barriers to increasing yields, upgrading cropping patterns, reducing costs, expanding markets) and a major effort is needed to improve productivity on a broad front. Other countries have successfully followed this path of *more income for less water*, and there is no reason why Yemen should be an exception. However, **getting more farm income per drop will require considerable effort beyond what is currently being done**.

12. Third, it was expected that changing the incentive structure will promote efficiency and intensification of water use. The doubling of the diesel price in 2005 is certainly the boldest policy change that has been made, but response has been mixed. Those who can afford it – or who can access subsidized programs – are certainly investing in water-saving productivity improvements. Others are simply reducing the level of their activity, saving water but losing income. In addition, higher diesel prices have also driven up the cost of domestic water. This has little impact on resource conservation, but a negative impact on incomes and welfare, particularly for the poor. Rural people have reacted to the price rises by reducing water use, but whether this will be compensated by improved productivity and access depends on the sequencing of the reforms: efficiency and welfare gains will only be broadly attained if changes in the incentive structure are accompanied by programs that promote investment in efficient irrigation and low cost rural water supply¹. The lesson is, that **NWSSIP is best implemented as a reform package , as piecemeal implementation of individual reform actions - particularly increasing the diesel price - can have uncompensated negative impacts**.

13. The fourth assumption was that a harmonized rural water sector strategy and coordinated institutional approaches would bring sustainable access to rural water, particularly for the poor. Reforms are certainly underway, with decentralization, “demand responsive approaches”, community associations and self financing. Remarkable growth in coverage has been reported - an extra 2 million rural people with access to safe water during 2003-5 –these extraordinary figures still need to be

¹ Building on these findings, more detailed quantitative analysis of the differential impact of policy adjustment, particularly of diesel price increases, will be carried out by government in the upcoming “*Study on Options for Changing the Economic Incentive Structure for Water Use*”.

verified. Some of the new investments are clearly more pro-poor and sustainable, than those that had been made a decade ago. However, some of the old constraints to access still persist, and efficiency needs to be greatly improved. Essentially, **implementation of the reforms needs to be seriously speeded up if Yemen is to have hope of increasing access of the rural poor to affordable and sustainable safe water on a scale large enough to attain its NWSSIP and MDG targets.**

14. A final expectation was that the results of NWSSIP overall will be pro-poor: here so far the evidence points the other way. Consolidation of existing wealth and income patterns, unequal access to rents and subsidies, and negative impacts on employment and incomes of the poor call attention to more focus on equity. **Corrective action is required if pro-poor outcomes are to be achieved.**

3. The program for water resources management and irrigated agriculture

15. This chapter assesses the objectives and major components of the reform program on water resources and irrigated agriculture and then summarizes the key lessons and PSIA recommendations on the sector. The lessons and recommendations deal in turn with improving NWSSIP implementation, with improving impacts of the reforms on different segments of the population, particularly the poor, and with assessing and addressing the political economy and institutional constraints.

A. Objectives and major components of the reforms

The problems of water resources and irrigated agriculture

16. As discussed above, the particular political economy of water in Yemen has allowed groundwater resources to be captured by larger farmers. This was done through (1) a *de facto* privatization of groundwater resources as, although undeveloped water is in Islamic jurisprudence *res nullius*, landowners have had - until the recent Water Law - unrestricted right to develop and use groundwater beneath their land; and (2) the ability to drill deeper, pump harder and run more intensive farming operations. Because the vast bulk of Yemen's water resources lie outside government control (see above), regulation was left to traditional governance systems that had no mechanism for controlling groundwater pumping, with resulting resource depletion affecting not only groundwater but also springs. The distorted incentive system (particularly the low diesel price) for long encouraged water over-use, with the rent going largely to the better off. Governance systems have not adapted to the changing resource situation, or where they have, it has been largely to consolidate the pattern of resource capture by the better off. These days, sheikhs are no longer mediators but interested parties, and may no longer be *primus inter pares* but part of the governing patronage system. Conflict over resources has been growing.

17. To be clear, this rapid development of groundwater resources has brought considerable benefits to the national and rural economy. Yemeni irrigated agriculture has developed enormously in the last thirty years – the area irrigated from wells has gone from 37,000 ha in 1970 to 368,000 ha (from 3% of the cropped area to over one third). Much of this area is under higher value crops, particularly fruit, vegetables and *qat*. Largely as a result of this “groundwater revolution”, Yemen's rural economy has remained relatively buoyant, with agricultural employment increasing by 25% during 1970-1996 and agricultural value added quadrupling (source: *Agricultural Statistics Yearbook*). Now, however, these achievements are being threatened by the declining quality and quantity of groundwater and its

increasing cost. Many rural areas are faced with the prospect of decline in incomes and employment unless water use can be reined in equitably and unless technical and economic measures can be applied to improve the presently relatively low returns to water in agriculture i.e. to produce “more income per drop”.

Ongoing and proposed NWSSIP reforms dealing with the water resource and irrigated agriculture problems

18. NWSSIP brings three linked sets of reforms to bear on these problems. Each set of reforms is based on a series of underlying assumptions or hypotheses about how people will react.

19. *Decentralized management and stakeholder partnership approach.* Steps include: (i) decentralizing to basin water committees within basin plans; (ii) implementing Ta’iz and Sa’adah basin plans on an integrated water resources management (IWRM) basis, monitoring and scaling up lessons; and (iii) promoting water user associations and self management at the local catchment level and in larger spate schemes currently under public management. The underlying hypothesis is that decentralizing and promoting community self-management will improve governance and help reduce resource capture and groundwater overdraft.

20. *Recognizing existing rights and controlling expansion.* Steps include: (i) recognition of farmer use rights; (ii) implementation of licensing, regulation and other provisions of the water law (by NWRA in coordination with local authorities); and (iii) national water well census and water resources assessment. The underlying hypothesis is that securing and regulating water rights will also help reduce resource capture and groundwater overdraft.

21. *Revision of the economic incentive structure for agricultural water use and increase in income per drop.* Steps include: (i) raising the diesel price and freeing up agricultural trade, including for *qat*; (ii) possible recognition of tradable water rights (pilot project in Ta’iz); (iii) improving water productivity through research, extension and subsidies to investment in sustainable water management (e.g. impounding water through economically viable development or improvement of dams and terraces) and to irrigation efficiency (e.g. piped groundwater distribution, drip irrigation etc.), with AFPPF funds increasingly channeled to water use efficiency investments; and (iv) treating *qat* as a crop. The underlying hypothesis is that these measures will reduce incentives to over-pumping, and that they will enable farmers to reduce water use whilst maintaining or even improving their incomes.

22. These NWSSIP reforms aim at improved water management and irrigation water services. NWSSIP is not very explicit about expected social development and livelihood outcomes. However, there are some implicit assumptions about possible impacts on the population and the distribution of these impacts. For example that decentralization and stakeholder partnership will create inclusive and accountable institutions, and reinforce social cohesion, where outcomes will be pro-poor. There is also an assumption that slowing groundwater overdraft will be pro-poor. However, there is no risk analysis in NWSSIP about these social development and livelihood outcomes. The reform program is being carried out through a mix of mechanisms (see Box).

Institutional mechanisms of reform in water resources and irrigated agriculture

Reforms in water resources and irrigated agriculture are being carried out through a mix of legal and regulatory, market, resource planning and allocation, and organizational mechanisms.

Legal and regulatory mechanisms: Legal and regulatory mechanisms comprise the application of the *water law* in terms of recognition of farmers' use rights, *regulation* of further groundwater development, and water resources *assessment*.

Market mechanisms: Market mechanisms comprise *changes in prices* which are either controlled by government (diesel) or influenced by government policies (fruit and vegetables, *qat*).

Organizational mechanisms: organizational mechanisms on the resource management side include: (1) *NWRA*, which has been set up to apply the water law and to develop basin planning; (2) *basin committees*, which are being established as a joint government/water user forum to advise on water resources management and basin water plans; and (3) *community level organizations* such as user associations or groundwater sub-basin associations, which are to be encouraged. A coordination role is to be played by (4) *governors* and their district level representatives; support is to be provided by (5) the *local councils* at governorate and district levels; and law enforcement is the responsibility of (6) the *security forces* and of the local branch of (7) the *Attorney General's Office*. Organizational mechanisms on the agricultural water productivity side include: (8) *MAI*, its branches and projects at governorate and district levels; (9) *AREA* for research and for coordination of extension; and (10) *AFPPF* for investment.

Source: Authors' compilation

B. Improving NWSSIP implementation in water resources and irrigated agriculture

23. **Basin committees and plans.** The program for setting up basin committees and plans is underway. The heterogeneity that marks the experience to date need not matter in an initial pilot stage, especially if it responds to a dynamic created by local ownership. It is most important to monitor and evaluate the experience and to draw conclusions that can be applied both to existing structures and to future ones. The role of NWRA is clearly critical, as a basin committee and a management plan validate NWRA's integrating role and activities. Water user representation is also a key element, as the reform is designed to build ownership and commitment to responsible self-management of water resources at the local level. There is scope for increasing user representation on the basin committees. There is also scope for developing the basin plans in a more participatory way, involving all agencies and stakeholders, and for speeding up the process. Finally, basin committees offer a first class medium for creating broad understanding at the local level of NWSSIP reforms as both beneficial and fair, and they can coordinate efforts within the basins to disseminate and dialogue on NWSSIP (see also paragraph 65 below). It is **recommended** that a process of monitoring and study be set up, with the objective of drawing up best practice approaches. The NWRA chairman told the March 2007 mission that he intends to work with the IWRM Group to convene a workshop and follow-up activities to initiate this process of monitoring and study.

The Sana'a and Sa'ada Basin Committees – equal commitment, diverse constraints

The Sana'a Basin Committee has been very active. They have issued over thirty 'decisions'. They expected that these decisions would be implemented with the force of law, as the whole of the Sana'a Basin has been declared a protected zone. However, this has not been the case. One decision was to try to limit expansion of Sana'a city, but unlicensed construction continues apace. They also have tried to limit drilling. They say that water user associations in the Basin are not yet strong enough to help with regulation, so they try to work with the District Councils. One member, a National Security officer, says frankly: "We have made so many circulars to the Districts. But security authorities at District level only move if they are paid." Another member says: "We are not confident that we can prevent the drilling of wells in Sana'a". (A short drive through the city and its environs confirmed the truth of this observation).

They have the advantage that the Sana'a Basin Water Management Project (SBWMP) is supporting them financially, and some of their decisions can be executed through the Project. They have been researching future sources for city water supply, and have found over 200 well owners who are prepared to sell water in bulk to the city. The Water Law, they say, does not forbid the Local Corporation from buying water. For the moment, however, the idea has been set aside, as there is no network to hook up the wells.

The Sa'ada Committee is just starting, full of energy and commitment. They are keen on promoting water user associations, and to improve irrigation. They have "set up committees in schools and women's associations." But they say they lack resources and good connections to the implementing agencies. "We do a lot of meetings," one lady representative says, "but we don't implement anything on the ground."

Next steps would seem to be including more user representatives in the Sana'a Committee, and linking the Sa'ada Committee better to implementation.

Source: Authors' compilation, focus groups discussion, Sana'a, December 5, 2006

24. Water user associations. A variety of different user associations is being promoted, ranging from loose groupings for the purposes of project-related training to associations of water users that may have the capacity to become field-level managers of water resources in their area. Heterogeneity of this nature is expected during the first phase of WUA development, but there is a need for cross-fertilization, learning and the application of lessons to build best practice approaches. Ultimately this process should lead to some alignment on common practices and perhaps to legislation or by-laws confirming the responsibilities and powers of WUAs. Close attention is needed to the purpose and sustainability of WUAs: if they are to be effective in water management, they have to provide a service that members value, and if they are to be sustained they need ongoing support. Here too it is **recommended** that a process of monitoring and study be set up. The objective would be to develop a typology of WUAs of different roles and functions for irrigation (groundwater/surface water) and water supply, define conditions for success (learning from experience from technical, institutional, management and capacity building aspects), draw up a methodology for setting them up and supporting them etc. During the March 2007 consultation mission, the NWRA chairman stated that he intends to work with MWE to set up a review process, beginning with a workshop and possibly following up with a study in due course; the deputy Minister of Agriculture stated that MAI also supports the need for a study of irrigation WUAs, which should in addition review the possible role of cooperatives as WUAs. During the September 2007 PSIA implementation mission, MAI officials confirmed that this should be taken up during the NWSSIP Update.

WUAs in Beit ‘Ithrib

At Beit ‘Ithrib in the Sana’a Basin, 72 farmers got together in five Water User Groups and federated into a single Water User Association with the help of SBWMP. Only a few members already have subsidized water saving investments under SBWMP; those who have, report excellent results: lower costs, higher productivity and 50% water savings. One farmer says he has reduced pumping hours per *libna* from 20 to 4.5.

In a meeting, some farmers were initially not very clear what the WUA is for after they had received the subsidized equipment. Then the head of one WUG (*jamaiyya al-mahjal*) spoke up. “The first idea is awareness and monitoring. We shall watch each other. Expansion of the cropped area will not be allowed. We are all aware of the problem.” Then another farmer spoke up. “Our objective,” he announced, “is water conservation...not expanding...we want modern irrigation, lower costs, higher income...”. When asked if they would all reduce pumping together, they said yes – but only when they had the modern irrigation equipment. And that, sadly, was more than a year late in being delivered to them.

Source: Authors’ compilation, focus group discussion, Sana’a Basin, November 30, 2006

25. **Regulation.** Several NWRA branches are registering some success with regulation, but progress is very uneven. Implementation is constrained by the problems with the Water Law, and the ambiguous role of the local councils. The Water Law was intended to provide legal clarity on water rights and infractions, but is apparently not doing that, in part because the by-laws have not yet been issued. Local councils’ role in Water Law implementation is at present very weak, because elected members change frequently and have diverse interests, and they receive little skilled administrative support. There are proposals in Ta’iz and Amran to put a “water sector technical unit” at both governorate and district local council levels. Progress is also constrained by the continuing institutional weaknesses of NWRA. Further, decentralization and community engagement in water resource management can assist in enforcing regulation. It is **recommended** that the by-laws to the Water Law should be completed as soon as possible, with the collaboration of the Ministry of Justice and the Attorney General’s Office, and that support be provided to the “water sector technical units” in the two water management pilot governorates. NWRA highlighted the need to complete the decentralization process with qualified staff and to evaluate the currently decentralized units to draw lessons and make amendments as necessary to the September 2007 mission.

The challenge of regulation

Where the NWRA branches are registering some success with regulation, this appears to be due to a combination of factors, including setting up of a toll free “hot line” (the number is 173) for anonymous tip offs, cooperation between NWRA and the governorates, mobilization and training of the local councils, and awareness campaigns to inform local people of the new regulations and procedures. This last action is perhaps the most important, as local rural people are the real custodians of the water resource and have the most direct interest in its sustainability. Rural people seem to know what the rules are supposed to be and where to go to try to get them enforced. For the first time, there seems to be some perception of more or less transparent procedures to be followed. The NWRA Chairman mentioned that the hotline is getting more than 100 calls a month. His assessment is that “it will take five years to get control of the situation”.

However, there is also deep skepticism and some practical disappointments. When the Falej WUA in Wadi Kabir went to the Complaints Committee of the Lahj Irrigation Council, upstreamers from Khalaf, Hussein and Habil drove them off at gunpoint. When a landowner began illegal drilling, the Beit ‘Ithrib WUA in the Sana’a Basin called the hotline, NWRA came, the drilling stopped for a while – and then proceeded. “*The system is rotten,*” the WUA members announced unequivocally. “*We can inform – but what’s the point if NWRA can’t enforce?*” The WUA had no confidence in the local council either: “*They don’t have authority*”.

Source: Authors’ compilation; Key-informant interview, Sana’a, November 29, 2006; Focus group discussion, Wadi Kabir in Lahej, December 13, 2006

26. **Agricultural trade policy.** As Yemen is currently negotiating the agricultural chapter for WTO access and is likely to make changes in its agricultural trade and subsidy policies in that framework, the changes to the agricultural trade regime proposed under NWSSIP have not yet been made. As the agricultural sector is still absorbing the shock of the diesel price increases, and as there is no coherent domestic or export market development policy, it is **recommended** that the trade policy reforms be postponed until the overall framework provided by a WTO agreement is in place.

27. **Water productivity.** Water scarcity and diesel price increases are sending powerful signals to farmers. However, except where farmers can extend their *qat* area, most farmers do not have access to solutions that can maintain their livelihoods. Farmers need to reduce water consumption, but most have no means to increase returns per unit of water used. So far, they are faced with a decline in their farm incomes. Even where technical solutions are available, poor and risky market prospects may not make them economically attractive. As a result, agriculture and the rural economy are at risk of decline, with particular risk for the most vulnerable. MAI is implementing some good programs to improve water productivity – e.g. GSCP, IIP. These programs are beginning to work, but they are expanding at a very slow pace and the vast majority of Yemen’s farmers, particularly poorer and smaller farmers, do not have access. In addition, these programs do not always solve the farmer’s problem, as investment in water saving needs to be accompanied by advice on on-farm water management and by agricultural packages and access to market outlets that can significantly increase “income per drop” and so raise incomes.

The diesel price rise bites in Sa’ada – but stokes demand for help with water saving investment

The Sa’ada Basin Committee is looking for solutions to one of the worst groundwater depletion problems in the world. They said outright “The increase in diesel price helped us a lot. The rate of overdraft has dropped (to two metres a year).” They see the farmers’ salvation in modern irrigation, with subsidized equipment under GSCP. The farmers are ready. The problem is that GSCP cannot keep up with demand, which is “five times greater than what the project is doing”.

Source: Authors’ compilation, focus group discussion, Sana’a, December 5, 2006

28. The challenge is to increase incomes and employment whilst reducing water use – equitably. Experience shows that this requires a combination of measures, for example investment in water saving, good advice on on-farm water management, agricultural packages that can raise farmers’ incomes, farmer organization in WUAs or cooperatives, market development, a harmonized approach to managing water resources at the central and governorate level etc. It is **recommended** that:

- MAI should focus on programs like GSCP and IIP, finding ways to scale up at least cost and with more attention to (a) equity, (b) on-farm water management advice, (c) technical packages to increase incomes, (d) monitoring and evaluation, including the impact of demonstration farms, and (e) capacity building of extension officers, and training for farmers in modern irrigation techniques, including training of farmers by farmers who have experience in modern techniques. MAI programs should be harmonized with ACU and its water saving programs.
- A large and increasing share of AFPPF financing should be allocated to investments in water saving and modern irrigation, perhaps through the GSCP mechanism. This reallocation of resources should be part of a broader reform of the governance of AFPPF. During the September 2007 mission, MAI reconfirmed to restructure the AFPPF, and selected this as a priority for NWSSIP Update.

- WUAs and cooperatives should be consistently promoted, supported and expanded as the lowest level of water management.
- The development of domestic and export markets for high-value crops requires urgent attention, and a public/private partnership approach is recommended.
- A harmonized approach on water resources management and irrigation should be developed between MAI and MWE, particularly (a) governorate level cooperation between all water agencies on planning and programming, regulation etc., (b) joint work with NWRA on basin committees, basin planning etc., and (c) special cooperation arrangements between MAI and NWRA reflecting local comparative advantage (for example, TDA could carry out all or much of NWRA's mandate in Tehama).
- A full irrigation strategy and investment plan should be developed, involving all stakeholders, and jointly with MoPIC, MWE, and NWRA, with a view to large program support. This strategy should be completed with special studies as needed, for example on dams, AFPPF, WUAs, impact of diesel price increases on farming etc...and be directly linked to NWSSIP. The strategy should be transparent regarding the technical, economic, social and environmental appraisal criteria for dam investments. The investment program should include the AFPPF budget in its financing plan. The strategy should also deal with issue of *qat* (see below). During the September 2007 mission, MAI officials confirmed that the irrigation strategy would be developed as part of the NWSSIP update.

29. During the September 2007 mission, GARWSP and NWRA consented to sign cooperation agreements for all RWSS projects to integrate rural water supply and sanitation into water resource management for sustainable resource allocation; to license all wells properly; and to conduct joint site selection. Both agencies highlight capacity and financial constraints, but plan to meet to develop a respective action plan.

GSCP and AREA contribute to water saving – but lack of knowledge and high market risk keep productivity below potential

Wadi 'Arafa is a dry area of granite outcrops. The GSCP farm is just beside the road. It is a demonstration farm, and the farmer has received pipes and drip irrigation on half his farm. The well dates from 1990, and has been deepened from 80 m to 120 m. There is, the farmer tells the study team, some depletion in the summer time. He is keen on GSCP: he reckons that he has reduced his water pumping by 40%, and the irrigation time that used to be 12 hours is now 6 hours. He has saved on labor costs, too: where he employed ten laborers before, now he employs only five. Yields have gone up as well: in the season, he is harvesting 100 baskets of tomatoes every three days compared to 70 before. However, he has changed nothing in his cropping pattern, nor in his production practices, and he has learned how to handle drip irrigation by trial and error.

Over the road, another farmer has a greenhouse. This has been paid for by French aid as part of an AREA project. The researcher, Dr Taher, comes from AREA in Ta'iz once every ten days. This is an excellent, wide awake farmer in his fifties, and his crop husbandry seems excellent. He is raising cucumbers, using drip irrigation, plastic mulch and fertigation, and selling for good prices. But he says he would not invest his own money in a greenhouse as the cost is high (Rls 400-500,000), it is a lot of work, and the market is too erratic. He fears he could not compete with the "one thousand plastic houses of Sa'ada". In addition, he has had some technical and farming problems: hail and wind have ripped at the plastic house, there are nematodes in the soil, and the leaves have had fungal diseases.

Source: Authors' compilation, Wadi 'Arafa, December 10, 2006

30. **Qat.** No progress has been made on the bold NWSSIP proposition to "treat *qat* as a crop", which could see, for example, research and extension on water saving for *qat*, inclusion of *qat* in the water well licensing program, support to water saving on *qat* farms under GSCP etc. It is **recommended**

that MAI (and AREA) and MWE revive the “*qat* as a crop” agenda at cabinet level and seek agreement to a coherent approach that will encourage water saving in *qat* production.

Qat as a crop

Mawiyya is a very low rainfall area – about 300 mm a year on average, at the very margins of agricultural feasibility. In the fields, a farmer is rooting out *qat*, which he will sell as planting material. He has never seen an extension worker since he was a child. His water is dwindling fast: now he pumps for two hours every 20 days. “Without *qat*,” he says, “we would be dead”. There is a tanker carrying water for *qat* parked on the road next to his farm.

At the nearby village of Qarya al Guneid, the main crop is also *qat*. It is the low bush variety, which produces three harvests a year. The first farmer we meet grows some *qat* himself. He also leases part of his land and water to a ‘*qat* contractor’ and gets in return three quarters of the crop. He has never heard of GSCP or of WUAs, but would consider “joining a *qat* WUA”. He has never seen an extension worker, but learned farming from his grandfather, and has learned *qat* farming by trial and error. He buys his chemicals - Saudi fertilizer and German pesticides – from Ta’iz, and uses a lot because they “make the leaves a nice shape”. There is also a green larva that he sprays against. Before, he grew other crops – maize, corn, mangoes, papaya, potatoes, tomatoes – but *qat* is the most profitable.

A second farmer, Nabil, is young and unmarried. He says, “I studied in Ta’iz, but I couldn’t find a job, so I had to start on *qat*.” Until two years ago, he says, anybody could drill. “It was good to stop it, but now it is anyway too expensive - around Rls8-9 million to get to the depth needed. If there is a dispute...well, there is a small department at the Local Council to complain to.” But he doesn’t look convinced. *Qat* is profitable for him, but margins are not always so big in this water short area.

A third farmer has 80 rows of *qat* about 50 meters in length, and estimated his land at half a hectare. He is paying Rls 2,800 (\$14) an hour for water and each irrigation is 15 hours, so that his water cost is enormous. He may net only Rls 160,000 (\$800) on a gross of Rls. 1 million (\$5,000).

All of these farmers were soaking the earth with furrow irrigation. None of them had considered or even heard of drip irrigation. Plainly these farmers are coping as best they can. For them, *qat* is a survival strategy and they get no help of any kind. There seems to be a case to treat *qat* as a crop here: to do some research and extension, to help particularly on water management, even include *qat* in water saving programs like GSCP.

Source: Authors’ compilation, interviews and focus groups amongst the qat fields of Ta’iz, December 9, 2006

31. **Improving NWSSIP ownership and strengthening implementation.** Continued dialogue among stakeholders is imperative to implement NWSSIP. Commitment exists, but implementation progress could be further enhanced. Continued leadership and decision-making from the top are needed to promote further decentralization, especially on the fiscal side. It is **recommended** that dialogue be sustained at all levels, particularly at the local level, so that NWSSIP reforms are seen as fair and beneficial, and support to their implementation is strengthened. Identified implementation constraints should continue to be openly discussed and monitored to further promote reform progress. This dialogue was promoted through the March 2007 consultations, and continued with the September 2007 mission, where stakeholders identified PSIA priority actions that would be implemented through NWSSIP Update and operations.

C. Improving the impact on the poor of the reforms in water resources and irrigated agriculture

32. The PSIA analyzed the impact of NWSSIP reforms in water resources and irrigated agriculture on different groups in society by tracking distributional effects through six ‘transmission channels’². This section summarizes the analysis and makes recommendations on how these impacts could be shared more equitably, and in particular on how negative impacts on the poor could be mitigated and positive impacts enhanced.

33. The analysis of the distributive impact of reforms suggests that *farmers with land and water assets are doing better than the landless*, and that *larger and more influential farmers are doing better than poorer and smaller farmers as well as the landless* in terms of coping with negative impacts of reform and in accessing subsidies. In addition, *poorer rural people in general are faced with higher water costs and lower employment opportunities*. The improvements to water productivity suggested above will help make the rural economy more prosperous, but specific actions are needed to protect the livelihoods of the poor. Immediate attention to **improving reform equity** is **recommended**, particularly:

- rapid expansion of public programs to promote agricultural water productivity, including research, extension and investment programs, with particular focus on employment-intensive cropping packages;
- improving the pro-poor design and entry criteria for publicly subsidized programs, particularly GSCP and future ones;
- restructuring of AFPPF to provide a much more pro-poor focus;
- sequencing of reforms so that price rises are balanced by increased access to the means of responding, and particularly to programs supporting improved water productivity and access to profitable market opportunities.

D. Addressing political economy and institutional constraints

34. The PSIA process (i.e. parallel analysis and policy dialogue) analyzed vested interests and institutional constraints and opportunities as they are critical to the equitable and sustainable implementation of NWSSIP and to reform outcomes in water resources and irrigated agriculture. The present section summarizes the analysis and makes recommendations for addressing the political economy, for overcoming institutional constraints and for developing opportunities to promote reform implementation and policy change.

35. **The “large farmer constraint”**. The political economy analysis suggests that large farmers are reluctant to reduce their water consumption, and will tend to use their influence to dilute the regulation and equity provisions of NWSSIP. ACU has been seen as representative of the interests of this group. It is **recommended** that a lead be sought at the very top (from the President of the Republic down) in support of NWSSIP, particularly its provisions that make for more transparency in decision making, and that the ACU and the cooperative movement be expanded to reach a broader membership.

² Poverty and social impact transmission channels consist of authority, price, access to goods and services, assets, employment, and transfers and taxes (World Bank, 2003, and 2005b).

36. **NWRA capacity.** NWRA lacks implementation capacity. The performance of some of its branches shows that the agency does have potential at the local level, but this initiative is currently being limited by “incomplete decentralization”: too many decisions are still handled centrally, finances are still largely centralized, the operating budget for branches is very small, and -the cruelest blow- Dutch program financing which was beginning to really empower branches, has ended at the time of data collection. It is **recommended** that NWRA review its decentralization program and complete it, so as to genuinely empower the branches. Probably the best approach is for NWRA management to work with consultants to analyze *in-depth* the flow of funds and information, and to draw up a transparent program to remove the blockages to the flows: e.g., to improve the budget preparation process and calendar to be able to meet deadlines, to improve the internal reporting system and institute a regular system of feedback etc. Equally, NWRA might select one branch for a full ‘management modernization’ program, to work on all the causes of poor performance identified above, including extensive capacity building. Government and donors should help to work out a mechanism for providing predictable flows of funds to branches for the implementation of priority programs. Government and donors should also agree on a performance-based incentive framework for NWRA staff. The NWRA Chairman emphasized the need to the September 2007 mission to complete decentralization with qualified staff, and to evaluate the decentralized units in order to draw lessons and make amendments.

37. **MAI and NWSSIP.** MAI participated only marginally in NWSSIP. There has been little cooperation between MWE and MAI: the agreement on AFPPF has not produced any change in investment patterns; the contentious small dams program continues; a cooperation agreement between MAI and MWE has gone unsigned for a year. However, the situation is changing: at the local level, cooperation in many governorates is quite good, and at headquarters, both MWE and MAI recognize that cooperation is essential: the water resources problem cannot be resolved unless the problem of irrigated agriculture and rural incomes can be solved – and vice versa. It is **recommended** that (1) MAI develops an irrigation strategy complementary to NWSSIP, working with MoPIC, MWE, NWRA and donors, and within an integrated approach; and (2) MAI and MWE sign cooperation agreements at both central and local levels, spelling out the mandate of each agency and the areas of cooperation. MAI confirmed to the September 2007 mission, that the Irrigation Strategy and Investment Plan will be developed with MoPIC, MWE, NWRA and stakeholders as part of the NWSSIP update. MAI called for technical assistance for GDI to update the PIP.

38. **AFPPF reform.** There was an expectation that under NWSSIP, MAI would undertake reform of AFPPF: improving its governance and pro-poor thrust, and devoting more resources to water management, but this has not yet happened. It is **recommended** that donors provide support to the proposed study on AFPPF reform, and that the study draw on the successful experiences of the Social Fund and the Public Works Project. The objective would be an AFPPF with transparent procedures and full accountability, supporting water productivity investments, and with a pro-poor emphasis. During the September 2007 mission, MAI reconfirmed to restructure the AFPPF, and selected this as a priority for NWSSIP Update.

4. The program for rural water supply and sanitation

39. This chapter assesses the objectives and major components of the reform program on rural water supply and sanitation, and then summarizes the key lessons and PSIA recommendations on the sector. The lessons and recommendations deal in turn with improving NWSSIP implementation, with improving impacts of the reforms on different segments of the population, particularly the poor, and with assessing and addressing the political economy and overcoming institutional constraints.

A. Objectives and major components of the reforms

Rural water supply and sanitation problems

40. The principal problem in rural water supply and sanitation is the poor coverage and low sustainability of safe water and sanitation schemes in rural areas, with consequent impacts on economic productivity and well-being. Health and gender impacts are particularly negative. Distributional impacts of the current situation are particularly marked; for instance, the poorest communities experience the worst service and highest costs, often a half day trudge to the spring or well. Some very poor communities have to buy water at prices ten times higher than those paid by the urban bourgeoisie, as poor rural consumers have to purchase potable water from private vendors, including tankers, which sell water at high prices, especially in remote areas. There is also perceived to be a current urban and anti-poor bias in resource allocation, as only 48% of public transfers for water and sanitation go to the rural sector which has three quarters of the population.

41. Publicly financed schemes have in the past been marked by poor implementation performance and low sustainability. Weak implementation has constrained the absorptive capacity of the sector. Even the implementation of purposely pro-poor projects has had its problems, with poor water quality in water harvesting, and difficulty in identifying sustainable low cost technology for coastal and low rainfall areas. Reasons that relate to the past, but continue into the present, include low technical, financial and human resource capacity; weak institutional set up, particularly a long legacy of centralization and a hesitant process of decentralization accompanied by political economy constraints, particularly patronage; and geography – notably Yemen’s difficult terrain and the consequent difficulty and high costs associated with bringing water service to remote communities.

42. Sanitation has received limited attention and investment to date, primarily through rural water supply projects. Lengthy debates about technology, cost sharing and modes of promotion have not yet resulted in agreement on a coherent strategic approach. A key issue remains the environmentally sustainable management of sewage.

43. The institutional set up is marked by several parallel public institutions, a situation which the GARWSP chairman mentioned “has weakened ownership, commitment, coordination and capacity”. At the same time, schemes financed and managed outside the public sector have long existed and are often viable and sustainable, for instance those set up by communities themselves, by private businesses, benefactors, or NGOs. However, these schemes are not linked into public sector entities and tend to be little known or understood. As a result, their technical and institutional achievements and issues remain unknown and lessons are not exploited. The study found several examples, including a successful, privately-managed scheme that is supported by a benevolent villager in Al Barakani, Ta’iz governorate. During the September 2007 mission, there was agreement between GARWSP and NWRA on the need to report the location and water resource use of all rural water and

sanitation schemes (public and private) to NWRA's monitoring and annual implementation program. The NWRA chairman further stressed that no reservoirs tanks and networks should be constructed before water resource availability has not been secured.

Ongoing and proposed reforms dealing with rural water and sanitation

44. NWSSIP won acceptance for three reform thrusts in rural water. These have been largely confirmed in a rural water supply and sanitation strategy that has been prepared by GARWSP and which is awaiting official approval. The NWSSIP reform thrusts were as follows:

45. *Rapid expansion of coverage with a pro-poor bias.* Steps include: establishing the sector strategy, investment criteria and plan for rapid expansion of coverage; increasing resource allocation to RWSS; investments to be decided by a transparent bottom up application process and decentralized approval system; and NGOs to be encouraged to participate.

46. *Making services inclusive, affordable and sustainable.* Steps include: priority to low cost technology; a demand responsive approach and community based self-management to be standard; initial capital subsidy, user associations to be self-sustaining financially thereafter; gender to be mainstreamed; sanitation to be obligatory; and water to be sourced with NWRA support and clearance.

47. *Improving implementation.* Steps include: setting up a "central office for sector reform"; decentralization of GARWSP to governorate branches; agreement on common approaches to be followed by all entities operating in the sector; community contracting, wherever possible; and development of technical advice material. The reform program is being implemented through a range of mechanisms (see Box).

Institutional mechanisms of reform in rural water supply and sanitation

Government's *PRSP* and *MDG Five Year Plan* set a general framework for improving rural water supply and sanitation coverage. *NWSSIP* broadly defines the reforms. The *Rural Water Supply and Sanitation Sector Strategy* sets out the strategy for implementing the reforms.

Resource planning and allocation mechanisms: Resource allocation is done by government budget decisions (*Five Year Plan, annual budget allocation*) and by donor decisions on projects or programs. *NWSSIP monitoring and evaluation* and the *Joint Annual Reviews* will monitor progress with reforms, expenditures and results.

Organizational mechanisms: *MWE* will oversee reform implementation. *MoPIC* will coordinate planning and financing and the links to the MDGs and the Five Year Plan. *MoF* will make annual budget allocations. In lieu of the 'central office for sector reform' originally proposed, *GARWSP* is now expected to implement sector reform measures. Other public agencies (e.g. *SFD, PWP, RWSSP*) are expected to: (i) coordinate planning with *GARWSP* and (ii) implement projects with communities in line with the strategy.

Source: Authors' compilation

B. Improving NWSSIP implementation for rural water supply and sanitation

48. **Sector strategy and coordination.** The rural water strategy, developed over the last three years and agreed at working level, has still not yet been officially adopted. The 2006 JAR reported a considerable increase in financial resources allocated. Rural water programs are now being loosely coordinated at central and governorate level, but overall results are uneven. The continuing dispersion of effort between agencies (public, private, NGOs, donor-supported projects) is harmful to rural people's chances of getting access to affordable safe water. There is also need for donor harmonization and alignment. It is **recommended** that: (1) a sectoral round table be held to revalidate or amend the sector strategy, and that the strategy be thereafter rapidly adopted and implemented; (2) priority attention be given to strengthened coordination and joint programming at central and governorate level in regard to identifying schemes, supporting their implementation, and monitoring and evaluating performance; and (3) donors find a means of aligning and harmonizing their approaches, preferably through a joint operation. During the September 2007 mission, GARWSP and RNE stressed that the strategy revalidation process should also be used to create a common understanding of terminology, unified implementation mechanisms for demand-responsive approaches, joint programming, and an exchange of data.

Coordination on rural water supply and sanitation at the local level remains uneven

In Ta'iz, the Governor leads coordination of all water sector agency programming. In some governorates, there is a partnership approach for rural water supply and sanitation, with joint programming between GARWSP and PWP. In other governorates, agencies see the need for greatly strengthened coordination and progress towards joint programming. In Tehama, for example, GARWSP mentioned that in 2003-06 other agencies constructed 60 water tanks, but GARWSP was able to complete only three of these projects with pumps. The entire GARWSP 2007 program in Tehama will be devoted to completing existing projects, many started by others, and some of which may have to be abandoned because they are not feasible. "The effort is scattered, it needs coordination," was the clear message.

Source: Authors' compilation, follow-up key-informant interview, GARWSP, Sana'a, March 12, 2007

49. **Local involvement in applications and approvals.** GARWSP has begun decentralization of decision making: communities and local councils are able to express demand and show ownership by participating in financing. These are real improvements. It is likely that pro-poor impacts have improved through better spread of projects geographically, and there is more scope in the decentralized system for the voice of poor communities to be heard. However, projects depend on local community capacity to pay, which inevitably gives priority to better off communities. Secondly, project selection and financing are subject to local political and personal forces implicit in the local council process, which do not necessarily favor the poorest or neediest. Finally, with three tracks for financing and implementation (community investment, local council investment, and GARWSP investment) the risk of fragmentation and delay is high. Too much of GARWSP's program is piecemeal completion of overdue projects. It is **recommended** that: (1) real mechanisms for hearing the needs of the poorest and for meeting them (e.g. higher subsidy) be worked out and implemented; and (2) attention be given to simplifying and streamlining project implementation.

Good management and political influence help a rural water project at Ja'ar to succeed

At a prosperous village just north of Ja'ar in Abyan, there is a big, well-established and successful rural water scheme, covering 429 households. In 2002, GARWSP helped to construct a tank, to pipe water into households and to connect households to a waste water disposal system

The scheme seems very well run. Each subscribing household has a contract to pay a flat RIs 300 a month, although the poor – e.g. widows – and mosques are exempt. If there is a difficulty in collecting from the school and the health centre, they ask for GARWSP help to put pressure on the relevant ministries. They employ part time staff for operation and maintenance and for fee collection. They have over a million rials (\$5,000) in the bank (they know the exact figure by heart) which is their reserve for unexpected repairs and for replacements. They attribute their success to 'leadership', tight management, good community representation and empowerment, and cost control

The association is led by the very active Sheikh Nasser, who is also a judge and head of the Appeals Court in Hajjah. With this kind of leadership, the community has had no problem in accessing projects – they recently had an SFD project, for example. For the GARWSP project, there was a 'formal' process of applying through the District Council. But essentially Sheikh Nasser had meetings in the Governor's office, and all went ahead quite smoothly.

Source: Authors compilation, focus group discussion, Abyan, December 14, 2006

50. Encouraging NGOs to participate. There is no indication that NGOs are being encouraged to expand their work in rural water, nor is there any channeling of public funds to NGO rural water projects. It is **recommended** that a formal policy be adopted of trying to encourage NGOs to intervene, particularly in the poorest communities, and that the NGOs be given access to some public and donor financing. Partnerships between GARWSP and NGOs should be considered. The chairman of GARWSP has confirmed to the September 2007 mission that a framework partnership agreement with NGOs would be developed as part of the NWSSIP update. NGOs could, for example, carry out the community mobilization and training for GARWSP projects, and develop water supply schemes in poorer areas. NWRA stressed that this should be done under the umbrella of *existing or planned* water resource management plans and Basin Committees.

51. Supporting community or privately run schemes. Many of Yemen's most successful schemes are financed and run by communities or as private businesses. It is **recommended** that a mechanism to support start up and capacity building for these community or privately run schemes be developed to supplement public development, especially in remote or mountainous areas. The cooperation of NGOs and of the Social Fund for Development should be sought in this regard. GARWSP told the September 2007 missions that a partnership framework for cooperation with NGOs will be created, and NWRA emphasized that community or private schemes need to be integrated with the water resource management plans and Basin Committees.

52. Low cost technology. There appears to have been little move towards more low cost technology, and GARWSP has little advantage in these approaches. It is therefore **recommended** that GARWSP forge a partnership agreement with SFD and other organizations to program interventions jointly, with SFD and NGOs specializing in the low cost approaches which they do well, and GARWSP continuing with its main product line of tubewell-based schemes.

Why the Social Fund stopped doing pumped water projects

From its creation in 1997 until 1999, the Social Fund for Development (SFD) focused in its rural water supply projects on pumped schemes using tubewells. In 2000, based on experience, they changed their approach entirely to do only water harvesting schemes. They reasoned that water depletion was reaching crisis proportions and only a return to the traditional technologies of water harvesting could guarantee a low cost sustainable supply. Bringing water to Yemen's 40,000 scattered rural communities by 'mechanical' means was impossible. The landscape was already littered with failed schemes of this type.

“At Manakha, in Shalaa Bab al-‘Ayn, we had financed a scheme to pump water from below ground at 500 meters up the mountain to 1100 meters elevation to supply 11 villages. The cost was very high, and the villagers could not afford the O&M. They fought anyway over who was to be employed by the scheme. In the end the sheikh took over the system to irrigate his *qat*.”

Now they see themselves as complementary service providers. Where water harvesting is the best solution, the Social Fund will invest. Where pumped schemes are the better solution, GARWSP will invest. This is the view of SFD – but they mentioned that it requires coordination and joint programming with GARWSP and others, and that this kind of coordination does not exist formally, neither at national nor at local level.

The Fund provides only materials not available locally, design and supervision services, and any skilled labor not available locally. The community provides the rest – but not in cash. The Social Fund managers say “everyone in the community has to work together on this, to avoid the culture of dependence.” They have developed a GIS system that will help determine the best solution for each village. They are sharing it with other members of the rural water consultative group that GARWSP has set up.

Source: Authors' compilation, key-informant interview, December 2005, 2006

53. Demand responsive approaches and community self-management. The demand responsive approach and community self management are certainly now the standard approach. However, GARWSP appears to have largely dismantled its competence in community mobilization and training. Other agencies such as SFD, UNICEF, RWSSP, and CARE have more skills in these areas. It is **recommended** that GARWSP revive its skills in community mobilization and in managerial, technical and accounting training, and that all agencies work together on capacity building in this area. Particular attention should be paid to learning the lessons from RWSSP and to integrating its community mobilization staff and approaches into permanent structures once the project ends.

Gender and health in rural water projects in Tehama

Sha'ab village in Marawea'a District has had a rural water supply scheme for thirty years. There has been an expensive revamping of the project and GARWSP has been advising the village. The study team asked about whether there would be women members in the committee, and what would be their particular responsibility. The response is incredulous: *Women members? Responsible? What??!! Women are not included in society here!* Then after a slightly shamefaced pause, during which we point out that women are responsible for cooking, washing, hygiene and educating the youngsters about water, they say: “You see we are all illiterate here. When the young girls, who are now at school, grow up, we will think about it.” Meanwhile, the girls in their neat uniforms and veils are peeking around the end of the stockade.

This village has problems of malaria. There is quite a lot of stagnant water around the well and they evacuate waste water and sewage in pits. They may sometimes put sand to prevent the mosquitoes. They ask “Will these pits affect the well?” The answer is “Yes”. GARWSP have advised them to dig the pits further away, but this is not really convenient. The issue is left hanging.

Source: Authors' compilation, focus group discussions, Marawea'a District, December 17, 2006

54. **Gender, sanitation and health.** With few exceptions, gender appears neglected in current programs. Sanitation and health guidance also appear to have been largely set aside in GARWSP programs. Yet the problems of water related diseases are intense, probably growing, and are the major cause of infant morbidity and mortality. It is **recommended** that (1) there should be a revived focus on these issues within GARWSP programs, learning together with RWSSP, SFD and others, and that serious consideration be given to how to deal with the waste water and sanitation issues, for instance, building on the experiences of UNICEF, SURWAS; SFD and others; and (2) on the health issues, there be governorate level coordination between the water agencies and health programs.

55. **Water resources sustainability.** Although GARWSP and NWRA are developing collaboration, there is little evidence that water has been sourced with NWRA support and clearance, and the number of dry wells is wastefully high. It is **recommended** that, at governorate level, cooperation agreements should be worked out to integrate rural water supply and sanitation into water resource management in order to guarantee sustainable resource allocation for all RWSS projects and that all wells are properly licensed. During the September 2007 mission, NWRA and GARWSP agreed to draw up cooperation agreements. NWRA emphasized this as crucial to support joint site selection, record of location and water resource use of all existing (public and private) rural water schemes in NWRA's monitoring and annual implementation program, and avoid construction of reservoirs tanks and networks without prior confirmation of water resource availability.

56. **GARWSP decentralization.** GARWSP has moved towards decentralization, but there is a long way to go. Decentralization of personnel and procurement decisions is only beginning, a large part of the investment funds is still centralized, information flows primarily upwards, most branches suffer from poor skill mix, and GARWSP technical standards remain quite modest. It is thus **recommended** that GARWSP: (a) give full attention to completing its decentralization program over the next two years with careful planning and accompanying capacity building; (b) complete the management information system (MIS) to allow real time tracking of project implementation; and (c) exploit further scope for more community contracting. It is recommended that projects financed by NGOs and donors outside GARWSP make provisions to support sector coordination and capacity building, including possible cooperation with, or strengthening of GARWSP branches in functions where GARWSP has less capability, such as social organization or training. For NWRA, it is recommended that government and donors agree a performance-based incentive framework for GARWSP staff.

Institutional capacity is key to managing rural water

For the Ugaila scheme in the Tehama, there is a committee representing all ten participating villages. They seem to have no problems in cooperating. They have meters for each household. The tariff has gone up progressively with the diesel price, from Rls 30 to Rls 40, and now to Rls 60, about twice the Sana'a tariff. Few people have problems paying, but consumption is down since the latest price hike. They have a good reserve built up - Rls 600,000-700,000. At the end of 2006 they were intending to bank the money, earmarking it for repairs and replacements, and possibly for building a small office to keep the records in. The villagers feel they are only able to manage the scheme efficiently because they were trained in book keeping and mechanics by the Dutch SURWAS project, which was operating in the Tehama until 2001.

Source: Authors' compilation, focus group discussion, Marawea'a, December 17, 2006

C. Improving the impact on the poor of the reforms in rural water supply and sanitation

57. The analysis of the distributive impact of reforms suggests that *poorer communities have more difficulty in getting support, and tend to face higher investment costs or have to settle for a lower level of service*. There is some evidence too that although rural water is generally affordable, the *recent diesel price rise has led to a drop in consumption by the poorest*. Access by poorer communities has probably improved somewhat, but *more could be done to ensure that the voice of the poorest communities is heard and that they get an appropriate technology*. Communities themselves generally make fair provision through informal means for those amongst them who cannot afford to pay. In the longer run, there is a risk to sustainability, particularly when expensive capital replacements are required. Attention to **improving the reform equity** is therefore **recommended**, particularly:

- more focus on pro-poor selection criteria, lower cost technologies and possibly higher levels of subsidy for the poorest
- reporting *regularly* to the JAR *process* on how the pro-poor bias of the program has been implemented (including details of projects in poor communities and districts)
- more involvement of NGOs and improved coordination and joint programming between GARWSP, SFD and NGOs at governorate level

58. During the September 2007 mission, stakeholders agreed to the need to enhance NWSSIP's equity focus and will operationalize this through the forthcoming NWSSIP Update.

How the poorest pay more for water: the case of Uzla Zararir, village of Al Qala

In al Qala, a very poor village in Wadi Rasyan near to Ta'iz, GARWSP drilled a well in 2000/1, but the well was on an incline and the pump could not be inserted. GARWSP drilled another well, to about 100 m, but it was dry. The scheme was abandoned, even though all the pipes to the tank and household connections were in place. Fortunately there was no cost to the community. NWRA's opinion is that there are overlays of volcanics and sandstone in the area, and a well would have to go to 500 meters to find sustainable supply. So currently, women and children are fetching small quantities from shallow wells, and some households are buying water from the next village at Rls 800/m³ (\$4/m³) delivered, twenty times the cost paid in the affluent suburbs of Sana'a or Ta'iz.

Source: Authors' compilation: key informant interview and focus group discussion, Wadi Rasyan, December 11, 2006

D. Addressing the political economy and institutional constraints

59. **Strengthen project selection based on DRA**. There is a political economy risk that project selection might be driven by patronage rather than by pro-poor demand, as powerful interests could lose benefits. There could be still some persistence of parallel tracks of influence. This constraint is best addressed by transparency about criteria and process, by honest application of the announced processes – and ultimately by success in bringing safe water to poor communities. During the September 2007 consultation mission, GARWSP highlighted that this is being addressed. It is **recommended** that the sector strategy, once adopted (see below), be published and transparently adhered to, and that progress in implementation be the subject of open debate, with appropriate publicity given to achievements – and to failures and their causes.

60. **Mobilizing the political constituency behind a single reform program.** The fact that approval of the sector strategy has been delayed suggests that there are continuing concerns over parts of the approach: this is a constraint but also an opportunity. It is **recommended** that the process of revalidation proposed above be used as a means of resolving issues amongst government, agencies (including SFD, PWP and RWSSP) and donors, and to create a common understanding of terminology, unified implementation mechanisms for demand-responsive approaches, joint programming, and an exchange of data.

5. Main message of the PSIA

61. All in all, the overall expectation of Yemeni people from NWSSIP is that, if all reforms are implemented effectively, aquifers should stabilize in the long term (albeit at a lower level than at present), returns to agricultural water should increase, farm incomes should stabilize, rural people will have access to safe water, and the incomes and employment of the poor will be protected. Although it is early in the reform program, the conclusions of the PSIA – based on measures so far, particularly the increases in diesel price and the implementation of agricultural water productivity and rural water supply programs – is, that these expectations are reasonable in *theory*. In *practice*, however, the results will be uneven over time, and the impacts are likely to vary across different social groups and geographical locations.

62. The effects already observed tend to confirm that positive impacts can be maximized and negative impacts minimized where the full range of reforms is applied. By contrast, leading with the reform of the incentive structure carries the risk of having a negative effect on the poor – if, for example, the diesel price rise is not accompanied by implementation of other reforms at the same time. This is exactly what has happened over the last two years – prices have gone up but most people have had no available response that could compensate for this. As a result, the NWSSIP reforms so far may be saving water, but at the risk of depressing the rural economy and with a particular risk to the employment and incomes of the poor. Clearly, **NWSSIP is best implemented as a reform package.**

63. The sequencing and dosage of reforms and support are important. Prices have gone up, some water is being saved, and there are negative impacts on the poor. **Now there is the need for (massive) support to productivity to restore incomes.** This is the most important message of the PSIA.

6. Next Steps

64. Throughout the PSIA study, partners emphasized the value of the process of assessing the impacts of reforms and the implementation constraints posed by vested interests. There was enthusiasm for continuing the PSIA process, especially on the need to take the messages to the very top. *If the highest leaders are convinced and are prepared to champion reform implementation, many partners insisted, then much can change.*

65. The PSIA offers a modest entry point to that process of conviction. It is, one commentator observed, “an elevator. It can identify issues on the ground and raise them to a higher level in a transparent way.” Put another way, the same commentator said that PSIA should be able to carry “small but devastating news to the highest level”, so that policy decisions can be made that, when implemented at the lower level, improve outcomes on the ground. The need now, he said, is to engage the Yemeni nation in studies and debate, “to get the fire power”. This process began with the

‘restitution workshop’ in March 2007, at which the main findings and recommendations of this report were discussed and validated, and a very large number of further comments and recommendations made, many of which have been incorporated into the final report and this summary. During the September 2007 consultation on PSIA implementation, stakeholders identified priority actions for implementation through the NWSSIP Update and operations. Further public debate, including at sub-national level, and analysis are encouraged to inform the on-going policy dialogue on and implementation of the NWSSIP process.

66. More generally, a strategy like NWSSIP can only be effective if there is broad understanding and ownership of its objectives and means, and if all stakeholders from decision makers down to poor rural people are convinced that water sector reform is beneficial and fair. NWSSIP needs to be acted on, and that requires that it is understood. Essentially, NWSSIP is as much a joint learning process as a strategy. PSIA finds that there is some knowledge of NWSSIP at the governorate and local level. However, there is scope for much more stakeholder involvement. It is **recommended** that a NWSSIP “stakeholder involvement plan” be developed, with a particular focus on taking targeted messages to the top (the most senior decision makers, parliamentary committees, the shura council, senior clerics) as well as, to key stakeholders at governorate and district level and to the entire population. Basin committees are one important channel for communicating these messages at the local level.

67. It is also **recommended** that PSIA findings be supplemented with further analysis as stakeholders see necessary, particularly by extending the impact analysis. Finally, it is **recommended** that an outreach effort be launched by MWE to engage other bilateral and multilateral aid agencies not currently involved in NWSSIP, particularly those from the Arabian Gulf.

68. During the March 2007 mission, all the above analysis and recommendations were extensively discussed and corrected. All stakeholders agreed on the PSIA Matrix - a “checklist” of recommendations and actions - that can be found in Annex 4 as ‘Key PSIA Recommendations and Stakeholder Responses’. During the September 2007 mission on PSIA implementation, stakeholders reiterated the significance of these recommendations. They highlighted the need to implement them through operations and the NWSSIP Update. It is **recommended** that this checklist forms the basis for monitoring progress on the recommendations, for example through the JAR process, and that the recommendations are realized through operations and the NWSSIP Update.

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Annex 1: The PSIA Matrix - Key Recommendations and Stakeholder Responses for Implementation

Recommendations	Stakeholder suggestions for follow up
NWSSIP Road show and enhanced dissemination at governorate level	MWE and other Yemeni agencies will disseminate NWSSIP message at the governorate level and at the policy level (via Interministerial Committee- lead by Prime Minister, plus MoPIC, MWE, MAI, MoF, MoLA)
Possible PSIA follow-up	-Contextual analysis to be added to the planned Incentive Study -Quantitative analysis added to GARWSP planned inventory of RWSS -Planned PSIA in UWSS

A. GROUNDWATER/ IRRIGATION – validated by stakeholder consultations (September 2007) for follow-up through the NWSSIP Update and operations

Recommendations	Stakeholder suggestions for follow up
1. Improving NWSSIP implementation	
Basin Committees: -monitoring, and best practice study (IWRM Group or consultant) -NWRA role is critical	-NWRA will organize workshops, round tables to assess different Basin Committee models and transfer lessons learnt into the further development of Basin Committees -Conditional to Yemeni cooperation, GTZ will conduct a best practice study in 2008 -NWRA to lead the coordination and alignment of the different contributions from GTZ, UNDP, WB and others (SIWI) for the IC Water Sector Program
WUAs: monitoring, and study (IWRM Group or consultant) to develop WUA typology, conditions for success, methodology for creating and supporting WUAs	-NWRA will further support exchange of experience across WUAs via study visits; will organize a workshop, round table in coming months to assess different WUA models, and to decide next steps (e.g. WUA best practice study) on how to best transfer lessons learnt into the further development of WUAs -GTZ aims to support the best practice study (possibly in 2008) -MAI supports the WUA study, and the institutionalization of WUAs that should be part of the Irrigation Strategy and Investment Plan (see below)
Regulation: -write Water Law by-laws with Ministry of Justice & Attorney General's Office; -support Ta'iz/ Amran water management pilots	NWRA underlines need for implementation in close cooperation with local council and security; agrees to pilots at governorate level only; and highlights the need to complete the decentralization with qualified staff and to evaluate currently decentralized units to draw lessons and make amendments as necessary
Agricultural Trade Policy: postpone trade policy reforms until WTO framework is agreed	MAI agrees (see below); suggests to develop trade/ economy outside of agriculture sector, e.g. via small projects for handicrafts by women
Treat Qat as a crop: MAI (+AREA) and MWE revive agenda (qat as a crop) at cabinet level, seek agreement to coherent approach for water saving in qat production	-MAI asks WB to disseminate its qat study. -Qat production control within next 10 years, based on 2007 law signed by Parliament

Recommendations	Stakeholder suggestions for follow up
<p>Water productivity: MAI scales up GSCP, IIP with (a) more focus on equity; (b) water mgt advice at farm level; (c) technical packages to increase incomes; (d) monitoring & evaluation, including the impact of demonstrations farms; and (e) capacity building of extension staff, and farmers in modern irrigation techniques, harmonized with ACU (water saving programs)</p>	<p>-MAI agreed, and has prepared investment proposals for scaling up improved irrigation, and will work with MoPIC, MWE and donors to develop a strategy for irrigated agriculture -The consultants for planned incentive study have been selected and study is expected to start. Study ToRs to be amended to capture impacts of recent diesel price rise</p>
<p>AFPPF Governance reform: more investment in water saving and modern irrigation (e.g. GSCP mechanism)</p>	<p>MAI agrees to reform, and to conduct a study. Cabinet resolution to restructure AFPPF exists.</p>
<p>Support for WUAs and cooperatives to expand as lowest level of WRM.</p>	<p>Agreed by stakeholders</p>
<p>Attention to domestic/export markets for high value crops: pro-poor & Public-Private Partnership</p>	<p>MAI aims to collaborate with private sector</p>
<p>Harmonized approach on WRM/ irrigation b/w MAI and MWE: (a) governorate level cooperation; (b) joint work with NwRA; (c) cooperation b/w MAI & NwRA</p>	<p>MAI supports the signing of a cooperation agreement between MAI and MWE</p>
<p>Irrigation strategy and investment plan: that includes transparency on dams and AFPPF reform and is developed with MoPIC, MWE and stakeholders (large program support) and is directly linked to NWSSIP.</p>	<p>MAI agreed and calls for donor support. Strategy will be developed as part of the NWSSIP update. MAI identified the need to restructure the irrigation sector to align with NWSSIP as a priority for the NWSSIP Update, and calls for technical assistance for GDI to update the PIP.</p>
<p>2. Improving Equity/ pro-poor orientation of NWSSIP</p>	
<p>Rapid expansion of public programs for agricultural water productivity</p>	<p>Further discussion needed</p>
<p>Improve pro-poor design and entry criteria for subsidized programs (GSCP +)</p>	<p>MAI will examine issues</p>
<p>Restructure AFPPF for more pro-poor focus</p>	<p>MAI will employ independent consultant to conduct study to reform AFPPF, see below</p>
<p>Sequence reforms: balance price rises by increased access to coping mechanisms</p>	<p>Concerted efforts needed by government and donors to implement NWSSIP as a reform package, not as individual reform actions (e.g. balancing diesel price increase with support for improved water productivity)</p>
<p>3. Considering the political economy, and institutional constraints</p>	
<p>“Large farmer constraint”: -Identify lead at very top (from President down) to support NWSSIP; -ACU and cooperative movement expanded for broader membership</p>	<p>Enhance profile of NWSSIP and get support for its implementation through Interministerial Committee (Lead by Prime Minister, plus MoPIC, MWE, MAI, MoF, MoLA)</p>

Recommendations	Stakeholder suggestions for follow up
<p>NWRA capacity: review and completes its decentralization to empower branches</p>	<p>NWRA agrees and calls for donor support</p>
<p>MAI and NWSSIP: - MAI develops irrigation strategy (incl. transparency on dams and AFPPF reform) that is complementary to NWSSIP with MoPIC, MWE, NWRA, donors, and within an integrated approach; - MAI and MWE sign cooperation agreements (central, local levels), specifying respective mandates and cooperation</p>	<p>MAI agrees and identified this as one of the key priorities for NWSSIP Update - See above on both points</p>
<p>AFPPF reform: Study to lead to reform of AFPPF towards transparent procedures and full accountability, support to water productivity investments, and a pro-poor emphasis</p>	<p>Study to be rolled into the Update of NWSSIP.</p>

B. RURAL WATER SUPPLY AND SANITATION – validated by stakeholder consultations (September 2007) for follow-up through the NWSSIP Update and operations

Recommendations	Stakeholder suggestions for follow up
<p>1. Improving NWSSIP implementation</p> <p>Sector strategy and coordination: (a) sectoral round table to revalidate/ amend strategy for rapid implementation (b) strengthening coordination & joint programming (central, governorate) to identify project, support implementation, performance M&E; plus donor harmonization and alignment (e.g. joint operation).</p> <p>Local involvement in applications and approvals -Real mechanisms for hearing and meeting needs of poorest (e.g. higher subsidy); -attention to simplify/ streamline project implementation</p> <p>Supporting community/ private schemes; Encourage NGOs participation under the umbrella of existing or planned water resource mgt plans and basin committees: -adopt formal policy for NGOs to intervene (esp. in poorest communities); empower them to gain access to public and donor financing. -support start-ups, capacity building for community or private schemes to supplement public efforts (esp. remote, mountainous areas) and work with NGOs and SFD.</p>	<p>Agreed by GARWSP Agreed by RNE with suggestion that this can also be accomplished through special meeting of RWSS working group Agreed by GARWSP, and RNE</p> <p>-GARWSP highlights the pro-poor criteria in its program -Mission suggests that report is prepared on poverty and gender focus of GARWSP program (possible subject for Dutch study)</p> <p>-GARWSP agrees to develop a partnership framework for cooperation with NGOs - NGOs could, for example, carry out the community mobilization and training for GARWSP projects, and develop water supply schemes in poorer areas</p>

Recommendations	Stakeholder suggestions for follow up
<p>Demand responsive approaches, community self-management GARWSP revive its skills in community mobilization and in managerial, technical and accounting training</p> <p>Water resources sustainability -cooperation agreements (governorate level) between GARWSP & NWRA for all RWSS projects (i) to integrate rural water supply and sanitation into water resource management in order to guarantee sustainable resource allocation for all RWSS projects, (ii) that all wells are properly licensed; and (iii) that site selection is conducted jointly with NWRA -No reservoirs tanks and network construction before water resource availability has been secured -GARWSP continues to inform NWRA’s monitoring and annual implementation program on location and water resource use of all RWSS (public, private) schemes</p>	<p>GARWSP agrees to form cooperative partnership with SFD, RWSSP, PWP and NGOs for community mobilization and capacity building, but calls for donor support on financing</p> <p>GARWSP and NWRA agree that these recommendations are top priority and need to be implemented, but highlight that there are capacity and financial constraints. The two agencies plan to meet to develop respective action plan</p>
<p>Gender, sanitation and health -revive focus in GARWSP programs (learning together with RWSSP, SFD); consider best approach to waste water and sanitation that reflect specific conditions of the local context, and draw on experiences of UNICEF, SURWAS; SFD and others -governorate level coordination on health issues b/w water sector agencies and health sector programs</p>	<p>GARWSP agrees. See above points on proposed study and partnership approach to social mobilization and capacity building</p>
<p>GARWSP decentralization (a) <i>Recommend that GARWSP:</i></p> <ul style="list-style-type: none"> • Completes decentralization over next 2 years (planning, capacity building) • Complete the management information system (MIS) for real time tracking of project implementation; • Exploits scope for more community contracting. <p>(b) <i>Recommend that projects financed by NGOs and donors outside GARWSP support sector coordination, and capacity building under the umbrella of existing or planned water resource mgt plans and Basin Committees, incl. cooperation with or strengthening of GARWSP branches in functions with lower capability e.g. social organization, training</i></p>	<p><i>Source: Authors’ compilation</i> GARWSP plan provides for completion of decentralization by 2009, but requires extensive capacity building, agreement of MoF and concerted donor support GARWSP is completing MIS, but needs support and follow-up</p> <p>See above</p> <p>Stakeholders agree to the need to design and specifically to implement performance-based improved remuneration system</p>

Recommendations	Stakeholder suggestions for follow up
2. Improving equity/ pro-poor focus of NWSSIP implementation	
<p>More focus on pro-poor selection criteria, more focus on lower cost technologies, possibly higher subsidy for poorest</p>	<p>Mission suggests this issues be discussed at the proposed sector round table</p>
<p>More NGO involvement, more improved coordination, joint programming b/w GARWSP, SFD , NGOs at governorate level</p>	<p>See above</p>
<p>Transition mechanism to be developed for RWSSP to capitalize on project achievements, to ensure sustainability of project outcome and to retain the capacity (particularly in social mobilization, gender inclusion, and focus on health education, sanitation and poverty.</p>	<p>All stakeholders agree on this necessity and urgency of a dialogue process to define a transition process (through RWSS working group, or special meetings)</p>
3. Considering the political economy, and institutional constraints	
<p>Strengthen project selection based on DRA: (a) the adopted sector strategy is published and transparently adhered to; (b) an open debate is held on the implementation progress (achievements, failures and causes)</p>	<p>See above on proposed study and report</p>
<p>Mobilizing political constituency behind a single water program</p>	<p>Concerted efforts through interministerial committees, sector round table, and JAR process</p>
<p>Use process of RWSS strategy revalidation proposed as a means of resolving issues amongst government, agencies (including SFD, PWP and RWSSP) and donors, so that there is common understanding of terminology (e.g. coverage, safe water), unified implementation mechanism of DRA, joint programming and exchange of data</p>	<p>Stakeholders agreed that round table, and RWSS working group, JAR process should be used for this process</p>

Source: Authors' compilation based on stakeholder suggestions and consultations. April 2007

Annex 2: Map of Yemen

