

## SECTORAL GUIDELINES FOR WATER SECTOR ROADMAPS

<b>Environment/Natural Resources and Social Protection/Health</b>	<b>Urban Water Supply and Sanitation (Including towns)</b>
<b>Rural Water Supply and Sanitation</b>	<b>Integrated Water Resources Management</b>
<b>Irrigation and Drainage</b>	<b>Flood Management</b>

### Environment/Natural Resources and Social Protection/Health

#### Outcomes

1. An Environmental Impact Assessment or similar law and process (agency with mandate and capacity to implement and enforce) are in place that includes large water projects or projects that affect water resources. The policy and procedures include specific treatment of downstream issues (from WFA Policy)

Targets/ (possible milestones/indicator)

- Existence of a mandatory EIA policy that covers large water resources projects
- Number of EIAs carried out on large water projects
- Existence of local capacity to carry out a high quality EIA
- Check other organizations for indicators and targets
- Check with environment sector roadmap for similar outcomes

#### Possible Outputs/Investments

- Develop NLPS that strengthen the EIA process in the country with respect to water projects.
- Ensure that ADB EIA project components such consultants hired for project EIA when needed include providing funding for close collaboration with local counterpart agencies to develop capacity and/or help set standards of best practice within the country.

#### Outcomes

2. Increased or reduce rate of degradation of areas of protected or rehabilitated forestland in critical watersheds (protected or rehabilitate area, ha) (from WFA Policy). Targets/ (possible milestones/indicator)

- % change in area or change in the quality of the existing forest land
- Change in biodiversity quality of area
- Increase in non-degrading livelihood opportunities for upland dwellers
- Change in water quality/sediment loading in rivers within watershed
- Policies and institutions in place to address forestland in critical areas
- Check with ADB forest policy and FAO for other indicators and targets.

3. Increased or reduce rate of degradation of wetlands (protected or rehabilitate area, ha) (from WFA Policy).

Targets/ (possible milestones/indicator)

- % change in area or wetland quality
- Improvement in water quality/quantity/timing in wetland areas
- Increase in biodiversity value
- Policies and institutions in place to address wetlands
- Look to RAMSAR or others for targets or indicators.

4. Increased or reduce rate of degradation of mangroves (protected or rehabilitate area, ha).

Targets/ (possible milestones/indicator)

- % change in area or mangrove quality
- increase in water quality/quantity/timing in mangroves areas

- increase in biodiversity value
- increase in fish production in mangrove areas
- policies and institutions in place to address mangroves
- look to FAO, ICLRM, or others for indicators and targets

5. Increased or reduce rate of degradation of coral reefs (protected or rehabilitate area, ha)

Targets/ (possible milestones/indicator)

- % change in live coral cover or reef quality
- Increase in biodiversity value
- Increase in local fishing
- Increased water quality in reef areas
- Policies and institutions in place to address coral reefs
- Look to FAO, ICLRM, or others for indicators and targets

Possible Outputs/Investments for 2, 3, 4, and 5

- For projects that would affect any of the above resources, ensure that a component is in the project to address the affected resources.
- Coordinate CSP and sector roadmaps development with other relevant natural resources and environment thematic groups
- Increase investment in natural resource projects.
- Include community based management programs within the projects design for affected resources
- Develop a three-year program for NLPS as part of the CSP to address institutional issues relevant

Outcomes

6. Reduced incidence and severity water pollution in the country's aquatic resources (from WFA Policy)

Targets/ (possible milestones/indicator)

- Reduce number polluted of water ways by X% and the severity of the pollution in X waterways by X% - or limit growth of increases.
- Check with environment sector roadmaps for similar outputs

7. Existence of water quality regulation/laws/policies and agency(s) with a clear mandate and capacity to execute including the following: water quality standards, wastewater discharge permitting process; polluting effluent discharge fees; enforcement; determination of biological thresholds and assimilative capacity, and reduce industrial and urban pollution through process, end-of-pipe, and downstream mitigation (from WFA Policy)

Targets/ (possible milestones/indicator)

- Include existence laws and policies to support the above mentioned functions
- Increased level of resources going to agencies for water pollution control
- Number of waste sources with permits
- Number of violations relative to permits
- Improved water quality in areas monitored and enforced area

Outputs for 6 and 7

• Increased investments that support pollution control technologies as a part of project development. Ensure that ADB water projects that have pollution control components work closely with local counterpart agencies to develop capacity and help set standards of best practice within the country.

- Increase investment in purely pollution control activities in appropriate countries.

• Develop country and regional NLPS that strengthen DMCs institutions as well as provide sector analysis for the most efficient pollution control strategies both in terms of technical solution as well as with an institutional focus. NLPS that helps develop the policies and institutions to achieve the above outcomes.

- Ensure that all ADB water projects have components that not only support public consultation, but work closely with local counterpart agencies to develop capacity and help set standards of best practice within the country.

#### Outcomes

8. Reduce the incidence of water-related diseases.

Targets/ (possible milestones/indicator)

- % reduction in incidence for targeted disease types
- Specific incidence of children under 5 with diarrhea as listed in database and target % reductions

9. Reduce the under-five mortality rate from water related disease (adapted from the millennium development goals, which address the under-five mortality rate for all causes)

Targets/ (possible milestones/indicator)

- Reduce by 2/3 the number of infants and children under-five mortality rate between 1990 and 2015 and apply to water borne disease – target from the MDGs
- Target numbers specifically for the poor.

10. Existence of agency with mandate and capacity to set standards, monitor, and enforce the quality of drinking of water

Targets/ (possible milestones/indicator)

- Development of standards or other enabling activities
- Include number of sources monitored
- Increase in testing capacity or other resources devoted to the requisite tasks
- Reduced water-borne disease.

#### Possible Outputs/investments

- Projects/funding to improve the access to improved water supplies
- Projects/funding to improve the quality of existing sources of drinking water
- Increased funding or project component to address water borne disease – coordinated with health and rural development projects.
- NPLS program to address the technical and institutional issues of the above.
- A coordination plan with WHO UNICEF and other relevant bi-lateral and multi-lateral

## Urban Water Supply and Sanitation (Including towns)

### Outcomes

1. Urban population with access to safe water supply.

Targets/ (possible milestones/indicator)

- % or total of population served (provide as disaggregated data as possible by type of supply – standpipe, direct water connection, small water provider).
- Target by 2015 – reduce by one half the current portion without access (from Millennium Development Goals)
  - 1a. If possible disaggregate by large urban areas v. towns (approximate population of 10,000<100,000)
  - 1b. If possible disaggregate by the poor without access

2. What is the performance of urban water supply with regard to non-revenue water (and/other performance measures)

Targets (possible/milestones indicators)

- reduction of non-revenue water or other performance targets
- timeline for the development of system performance auditing programs and methods.

3. Urban population with access to sanitation. For purpose of this indicator, it includes all types of sanitation systems (pit latrines to centralized collection) regardless of how the sanitation waste is disposed, so long as human waste is removed from the home.

Target (possible milestone/indicator)

- % or total of population served
- improve proportion of people with access to improved sanitation – by 2020 to have improved the lives of 100 million slum dwellers (Millennium Development Goals)
- Identify targets from other sources,
  - 3a. If possible disaggregate by large urban areas v. towns (approximate population of 10,000<100,000)
  - 3b. If possible disaggregate by the poor without access

4. Percent of urban sanitation population connected to wastewater treatment (this could include both large centralized systems as well as small decentralized/package systems that provide treatment beyond septage)

Target (possible milestones/indicator)

- Can be % total of population served
- Number of domestic connections
- Volume of wastewater treated
- Number of cities with sewage treatment facilities
  - 4Ai. Can be disaggregated by primary, secondary, and tertiary treatment
  - 4Aii. If possible disaggregate by large urban areas v. towns (<100,000)

5. Percentage of total urban effluent that has wastewater treatment (this could include both large centralized systems as well as small decentralized/package systems that provide treatment beyond septage)

Target (possible milestones/indicator)

- Can be % total of estimate effluent treated (primary v. secondary)
- Number of domestic, municipal and industrial connections served.
- Volume of wastewater treated
- Number of cities with sewage treatment facilities
- can be % total of population served and volume of wastewater treated by certain type of treatment
  - 5a. Can be disaggregated by primary, secondary, and tertiary treatment

6. Number of the urban population that are served by autonomous water supply (and sanitation agencies). Autonomous (either municipal or private or mixed) agencies are those not dependent on the government at any level for support, financial or otherwise (except regulatory)

Targets (possible milestone/indicator)

- Actual number of autonomous agencies or cities with autonomous
- % of total population served by such agencies
- % of urban/town centers served by such agencies
- Government strategy and enabling legislation to remove itself from the sector and/or address the enabling environment or decentralization plan to create more autonomous agencies

7. The level of costs recovery (or inversely the level of subsidy to support agencies) for urban water supply (and sanitation) systems (WFA Policy)

Targets (possible milestone/indicator)

- Increased total level of cost recovery in the sector
- Total number or percentage of system that are financially viable without O&M subsidy – similar to number six
- Government plan to phase out subsidies for water system

8. Existence of regulatory capacity and regulatory systems in the country – (WFA Mandatory Policy Rec.)

Targets (possible milestone/indicator)

- Existence of a regulatory body for economic and possible performance regulation for water utilities
- The number of water agencies that are under regulation
- Proposed enabling legislation to create such a body

9. Existence and role of the private sector or public-private partnership in the UWSS sector? (WFA Policy)

Targets (possible milestone/indicator)

Increasing activity by the private sectors UWSS including the following:

- Simple private contracting for technical/construction services
- Existence of private capital for financing
- BOT projects for new water infrastructure
- Management contracts to operate water supply systems
- Contracts to build and develop water supply system
- Full divestiture of water supply system to private operator
- Government plan or enabling legislation to increase the role of the private sector

10. Existence of tariff reforms through its water related projects and programs to modify structures and rates so that they reward conservation and penalize waste – (WFA Mandatory Policy Rec.)

Targets (possible milestone/indicator)

- Charges to the water distribution company from the bulk water supplier sufficient enough to create incentive for reducing systems losses and encouraging conservation among its clients
- Include existence or development of inclining block rate structures for the largest utilities
- Rates designed and high enough to have a perceptible impact on demand
- If a financial regulatory body exists, then conservation pricing is adopted as a part of its methodology for tariff setting.

11. Existence of demand management or conservation measures in the sector (WFA Mandatory Policy Rec.)

Targets (possible milestone/indicator)

- Government technical standards for water efficiency in water using devices – toilets, showerheads, etc.
- Public awareness and education campaign for customers
- investment by government or industry in water conservation

- Integration of conservation and demand management into overall water sector planning

#### Possible output and investments

- Increase in funding/lending that address the basic needs of water supply for the sector.
- Privatization or other WSS projects that require system expansion or additional water supplies to poor areas as part of overall project development with emphasis given to ensuring services are extended to the poor.
- Increase in lending products that seek to stimulate alternative modes of water supply delivery through increasing the role of autonomous and private sector service providers.
- Increase the amount of lending for sanitation and wastewater treatment activities.
- Increase and target assistance for the Nonlending Products and Services (NLPLs) for institutional development at the country, subregional, and inter-regional level.
  - develop three year program of NPLS activities as part CSP/CSPU in coordination with investment plan for CSP
  - ensure that NPLS are commensurate with reforms identified in sector roadmaps and support investment recommendations in the roadmaps
  - target NPLS activities on outcomes identified above to support implementation of the ADB water policy
  - when appropriate, and especially in cases of economic/thematic/sector work, pursue regional and interregional NPLS to achieve economies of scale and allow for a comparative analysis
- Include policy dialogue with relevant agencies as part of project design.
- Increase institutional components in lending products that increase capacity of local counterpart agencies to achieve desired sector reforms. All structural components should have complementary institutional and capacity components.
- Identify other donor activities and objectives with regard to reform in the country. Develop plan for coordination and development of a unified reform approach with other donors in the country.
- Make sure project activities contribute to overall sector reforms. Increased project components to address institutional activities.

## Rural Water Supply and Sanitation

### Outcomes

1. Rural population with access to safe water supply.

Targets (possible milestones/indicator)

- % or total of population served
- % or total of villages served
- distance from supplies
- time spent by communities to collect water
- Target by 2015 – reduce by one half the current portion without access – from Millennium Development Goals.

1a. If possible disaggregate by the poor without access

2. Rural population with access to sanitation

Target (possible milestone/indicator)

- improve proportion of people with access to improved sanitation – (Millennium Development Goals do not address sanitation)
- need to identify targets look to other sources,

2a. If possible disaggregate by the poor without access

3. Rural water supply systems that are self-sustaining for O&M either through community participation; financial cost recovery; etc.

Targets (possible milestones/indicator)

- % or number of systems that are self-sustaining for O&M
- reduced subsidy into the sector or increased number of self-sustaining systems.

### Outputs and Investments

- Increase in /funding lending products that address the basic needs of water supply for the rural sector.
- Increase in rural water supply components that are a part of other rural development projects or irrigation projects.
- Increase in lending products that seek to stimulate alternative modes of rural water supply with greater community participation
- Increase the amount of lending for rural sanitation and wastewater treatment activities
- Increase and target assistance for the Nonlending Products and Services (NLPLS) for institutional development at the country, subregional, and inter-regional level.
  - develop three year program of NPLS activities as part CSP/CSPU in coordination with investment plan for CSP
  - ensure that NPLS are commensurate with reforms identified in sector roadmaps and support investment recommendations in the roadmaps
  - target NPLS activities on outcomes identified above to support implementation of the ADB water policy
  - when appropriate, and especially in cases of economic/thematic/sector work, pursue regional and interregional NPLS to achieve economies of scale and allow for a comparative analysis
- Include policy dialogue with relevant agencies as part of project design.
- Increase institutional components in lending products that increase capacity of local counterpart agencies to achieve desired sector reforms. All structural components should have complementary institutional and capacity components.
- Identify other donor activities and objectives with regard to reform in the country. Develop plan for coordination and development of a unified reform approach with other donors in the country.
- Make sure project activities contribute to overall sector reforms.

## Integrated Water Resources Management

### Outcome

1. Amount of bulk surface water supplies and groundwater supplies developed in the country (could be as a percentage relative to current demand and projected for water)

Targets (possible milestones/indicator)

- New supplies developed in MC(B)M or projected available supplies relative to projected demand
- Percentage of available supply developed
- If possible disaggregate supply sources by new surface water, new groundwater, agricultural and urban demand management, and water reuse.

2. National water policy(s)/law(s) in place that clearly and comprehensively specifies institutional responsibilities taking into account different levels of governance including national, state, local, and basin (from WFA Policy)

Targets (possible milestones/indicator)

- Existence of policy(s)/law(s) or a reform of existing laws.
- Development of enabling legislation/law that achieves these ends implements

3. Transparent and participatory water allocation and reallocation processes with due process to assess impacts of any new or changed water allocation and that ensures the access rights of the poor and other marginalized groups (from WFA Policy)

Targets (possible milestones/indicator)

- Existence of policy(s)/law(s) or specified reforms to existing allocation framework at improve transparency and equity
- Existence of a water rights system exist for water withdrawals for both ground and surface water that has an effective and administration and enforcement system.
  - Estimated percentage of withdrawals that have an accompanying permit or water right (by number of sources or total withdrawal)
  - Estimated amount of withdrawals that exceed permit limits (percentage or total volume).

4. A neutral apex body or effective interagency coordination mechanism in place to oversee water resources policy including allocations with responsibility for management of water resources (from WFA Policy)

Target (possible milestone/indicator)

- Existence of such an agency or a coordinating mechanisms
- Enabling legislation proposed to create such an agency
- A plan to create a coordinating function/body to among existing agencies to fulfill this role.

5. Institutionalization of process (assigned agencies and responsibilities) with funding mechanism to support an ongoing data collection network for integrated water resources management decision-making

Target (possible milestone/indicator)

- Existing data collection and management networks
- Development of permanent funding mechanisms to support data collection
- Specific types of monitoring of data collection including hydrologic (surface and ground); water quality, and abstraction information; quality of existing data.

6. Existence of national and/or state water resource management plan(s) with an action agenda that incorporates both investment planning and institutional reforms and ongoing process to keep updating this plan - internal planning should not rely on external consultants (from WFA Policy)

Target (possible milestone/indicator)

- Starting or completion of the planning process or existence of the plan.
- Creation of new institutions/policies or realignment of existing institutions/policies to accomplish this –

7. Current water resources assessments on basin basis and existence of river basin organizations (from WFA Policy)

Targets (or milestones)

- Data organized on a basin-wide basis
- Basic data and planning structure is in place to create river basin development plans.
- Ability to perform a water balance within the country's major basins.
- River basin development and management plans with accompanying institutional structure for implementation
- Individual basin management/development agencies (Basin Management Organizations) or coordinating mechanism of existing relevant agencies exist (from WFA Policy).
- Enabling legislation/statutes to develop such organizations or promote a river basin approach

8. Legally authorized bulk water supplier to provide water for water service providers that is separate entity from water service providers (from WFA Policy)

Targets (or milestones)

- Existence of bulk water supplier separate from water service providers.
- Bulk water charges from bulk water supplier to water service provider to support cost recovery for bulk water resources development

Possible Outputs (generic in nature to address institutional issues)

Outputs in this case are difficult to specify since the mechanisms to stimulate institutional reform are much less direct and much less understood than the mechanisms to increase water supply. The outputs also apply to all of the specific outcomes listed above.

- Increase and target assistance for the Nonlending Products and Services (NLPLs) for institutional development at the country, subregional, and inter-regional level.
  - develop three year program of NPLS activities as part CSP/CSPU in coordination with investment plan for CSP
  - ensure that NPLS are commensurate with reforms identified in sector roadmaps and support investment recommendations in the roadmaps
  - target NPLS activities on outcomes identified above to support implementation of the ADB water policy
  - when appropriate, and especially in cases of economic/thematic/sector work, pursue regional and interregional NPLS to achieve economies of scale and allow for a comparative analysis
- Include policy dialogue with relevant agencies as part of project design.
- Increase institutional components in lending products that increase capacity of local counterpart agencies to achieve desired sector reforms. All structural components should have complementary institutional and capacity components.
- Identify other donor activities and objectives with regard to reform in the country. Develop plan for coordination and development of a unified reform approach with other donors in the country.
- Make sure project activities contribute to overall sector reforms. Increased project components to address institutional activities.

## Irrigation and Drainage

### Outcome

1. Area of developed irrigation land in the country.

This can either be expressed as an area of square hectares or as a percentage of total possible irrigable area that can be developed. This indicator and the others may be disaggregated by type irrigation systems – e.g. large gravity systems, smaller community gravity systems, shallow-tube well or other pump type systems

Targets/(possible milestones/indicator)

- Increase in the amount of irrigated land or the percentage of irrigable land developed
- 1a. target development in areas where rural poor are concentrated

2. Irrigation efficiency for existing irrigation systems, which is defined as the percent of water needed by the crop over the total amount delivered into the irrigation system or project.

Targets/(possible milestones/indicator)

- Increase the irrigation efficiency for all irrigation systems as an aggregate
- Reduction of the number of irrigation systems below a specified efficiency

3. Cropping intensity in current irrigation systems. The total area harvested in an irrigated areas over a one year period divided by design area of the irrigation system multiplied by the number cropping seasons in a year.

Targets/(possible milestones/indicator)

- Increase in the cropping intensity for all systems
- Reduction of the number of systems below a specified intensity

4. Yields per hectare of primary irrigated crops in the country.

Targets/(possible milestones/indicator)

- Increase average yields for the major crops

5. Existence of benchmarking system for irrigation system performance – including O&M and equity of water distribution (WFA Policy)

Targets/ (possible milestones/indicator)

- Plan to implement benchmarking system
- Ongoing benchmarking with performance indicators in place.

6. Cost-recovery for irrigation systems – treat O&M and capital costs separately. It may be necessary to break this into different indicators if different types of irrigation systems are present (e.g. large national systems, small communal systems, small pump systems)

Targets/(possible milestones/indicator)

- Cost cutting for system O&M
- Reduced subsidy flowing into the sector from the government
- Increase water fees or other charges for users within their ability to pay

7. Increased collection rate for irrigation service for those systems that charge their users irrigation fees.

Targets/(possible milestones/indicator)

- increase in collection efficiency for the irrigation system

8. Average farmer incomes in irrigation areas

Targets/ (possible milestones/indicator)

- increase in the average farmer incomes

9. User participation in the system and degree and decentralization of national irrigation agencies (WFA Policy)

Targets/ (possible milestones/indicator)

- existence of water users associations

- water users engaged in basic O&M activities for the systems – purely contractual
- water users involved in system planning and directing operation control over budget, staffing, and other decisions – meaningful governance activities
- water users have actual ownership over system infrastructure
- contracting of irrigation system function to non-irrigation agency staff
- reduction of irrigation agency staff

Additional possible outputs, actions and investments

- Increased lending/funding to improve the productivity of existing irrigation facilities
- Increase in NLPS to develop sector reforms and help transform irrigation service agencies to become more.
- Lending and NPLS activities to improve coordination between agriculture/rural development activities such as farm extension, micro-credit, and market development to improve productivity and farmer livelihoods.
- Donor and counterpart coordination meetings to develop a reform agenda for the irrigation agency

## **Flood Management**

### Outcomes

1. Annual economic losses due to floods (US\$)

Targets/(possible milestones/indicator)

- Reduce by a certain percentage the annual losses for floods
- Limit the annual losses from floods to a targeted number each year

2. Number of persons affected by floods annually

Targets/(possible milestones/indicator)

- Reduce by certain percentage of population or a total number the persons who are exposed to flood annually
- If possible target by poor

3. Economic activities exposed to flood risk

Targets/(possible milestones/indicator)

- Increase flood protection through structural and non-structural means to protect economic activities
- Transfer certain percentage of economic activities out of flood risk areas

4. Existence of flood emergency services to restores economic losses, infrastructure, and social services after such flood disasters

Targets/(possible milestones/indicator)

- Time taken to restore basic services and areas to recover after a flood
- Percent of economic losses compensated

### Outputs

1. Number of persons exposed to flood risk

Targets/(possible milestones/indicator)

- Increase flood protection through structural and non-structural means to protect people, if possible target by poor

2. Complete coverage of all flood risk areas with a flood warning systems

Targets/(possible milestones/indicator)

- % increase of area covered by flood warning system
- % reduction of area with flood risk

3. Existence of national/provincial/basin flood management plan with structural and non-structural measures

Targets/(possible milestones/indicator)

- Development of plan
- Development or designation of agency with planning responsibilities

### Additional possible outputs, actions and investments

- Increase in funding/lending to support structural and non-structural flood management measures.
- Increase NLPLs for developing flood management strategies including development of flood warning systems
- Increase project components to help clients develop disaster response capabilities
- Work with other donors and clients to develop and coordinate flood prevention and flood response capacity.