PRIORITY AREAS WHICH REQUIRE SUPPORT FROM JAPAN ITO TRAINING AND TECHNICAL REQUIREMENTS

18 MARCH 2008

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Purpose of Presentation

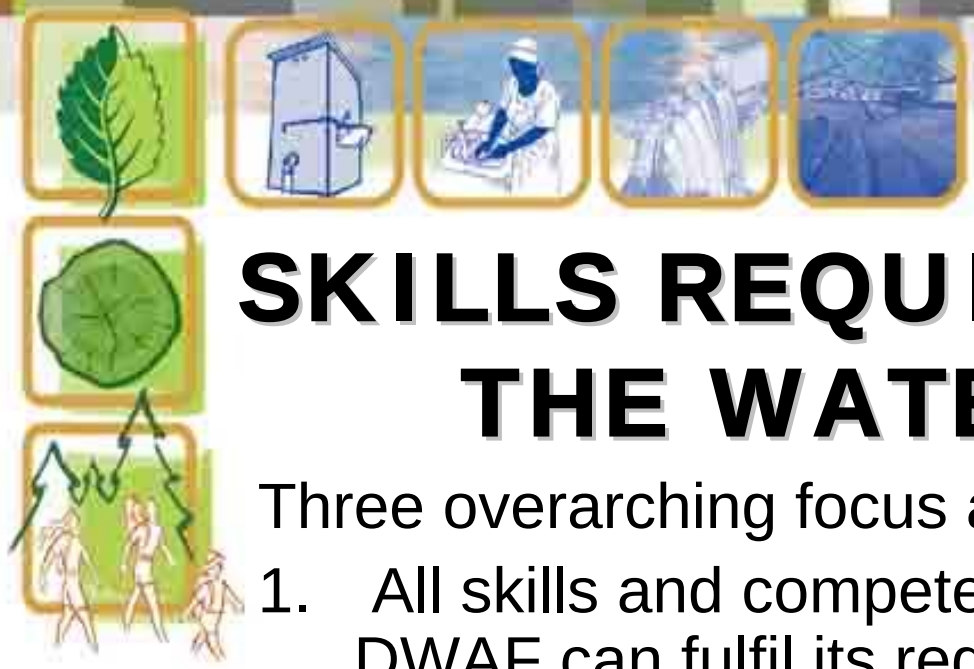
Skill Requirements for Water Sector

Capacity Challenges

- DWAF
- Water Resources management Institutions
- Water Services Institutions

Sector Skills Priorities

Sector Intervention Priorities



SKILLS REQUIREMENTS FOR THE WATER SECTOR

Three overarching focus areas:

1. All skills and competencies required to ensure that DWAF can fulfil its regulatory role efficiently and effectively
2. All skills and competencies required to ensure water and sanitation services delivery as well as the ongoing O & M required; and
3. All skills and competencies required to ensure integrated water resources management.

WATER SECTOR INSTITUTIONAL FOCUS

- Water Services Delivery – Institutions: water services authorities, water services providers (water services intermediaries; water boards; private sector; NGOs\CBOs)
- Water Resources Management – Institutions: National Water Resource Infrastructure Agency; Catchment Management Agencies (CMA); Water User Associations (WUA) and associated structures
- National & provincial government departments;
- NGOs/ CSOs/ communities

IMPERATIVE 1

ENSURING WATER RESOURCES MANAGEMENT AS WELL AS WATER AND SANITATION SERVICES DELIVERY THAT ARE SUSTAINABLE

IMPERATIVE 2

ENSURING THAT MDG TARGETS ARE MET AND THAT POOR, UNDER-SERVED AND PREVIOUSLY DIS-ENFRANCHISED ATTAIN QUALITY OF LIFE

TRAINING & SKILLS DEVELOPMENT MEETING TWIN IMPERATIVES

CAPACITY CHALLENGES – DWAF (1)

- Leadership
- Strategic management capacity required to ensure a progressive and incremental move from a (i) predominantly water services support role to a regulatory role & (ii) guiding and supporting water services institutions towards meeting regulatory requirements;
- Development of an adequate resource pool for the rapid deployment of hands on support to water services and water resources institutions;
- Significantly increased capacity to play a strong mentorship role across a diversity of disciplines (planning, hydrology, resources management, etc., etc.)

CAPACITY CHALLENGES – DWAF (2)

- Ability to lead, plan, coordinate and implement systematically and pro-actively in a cooperative governance milieu
- Increased capacity to address the specific requirements for the developmental approach to water and sanitation required
- Increased capacity and skills to promote and function within the demands of an Integrated Water Resources Management paradigm.
- Above just as a start

CAPACITY CHALLENGES - WATER RESOURCES MANAGEMENT INSTITUTIONS (1)

- The implementation of IWRM will require that many individuals and organisations fulfil roles markedly different from those they have played in the past (traditionally centred around quantity/quality management) ;
- Arming role-players with such competencies will entail not only *training* (the development of task-specific skills), but also *capacity building* (the cultivation of more general attitudes, values, knowledge and abilities to lay the necessary groundwork for training).

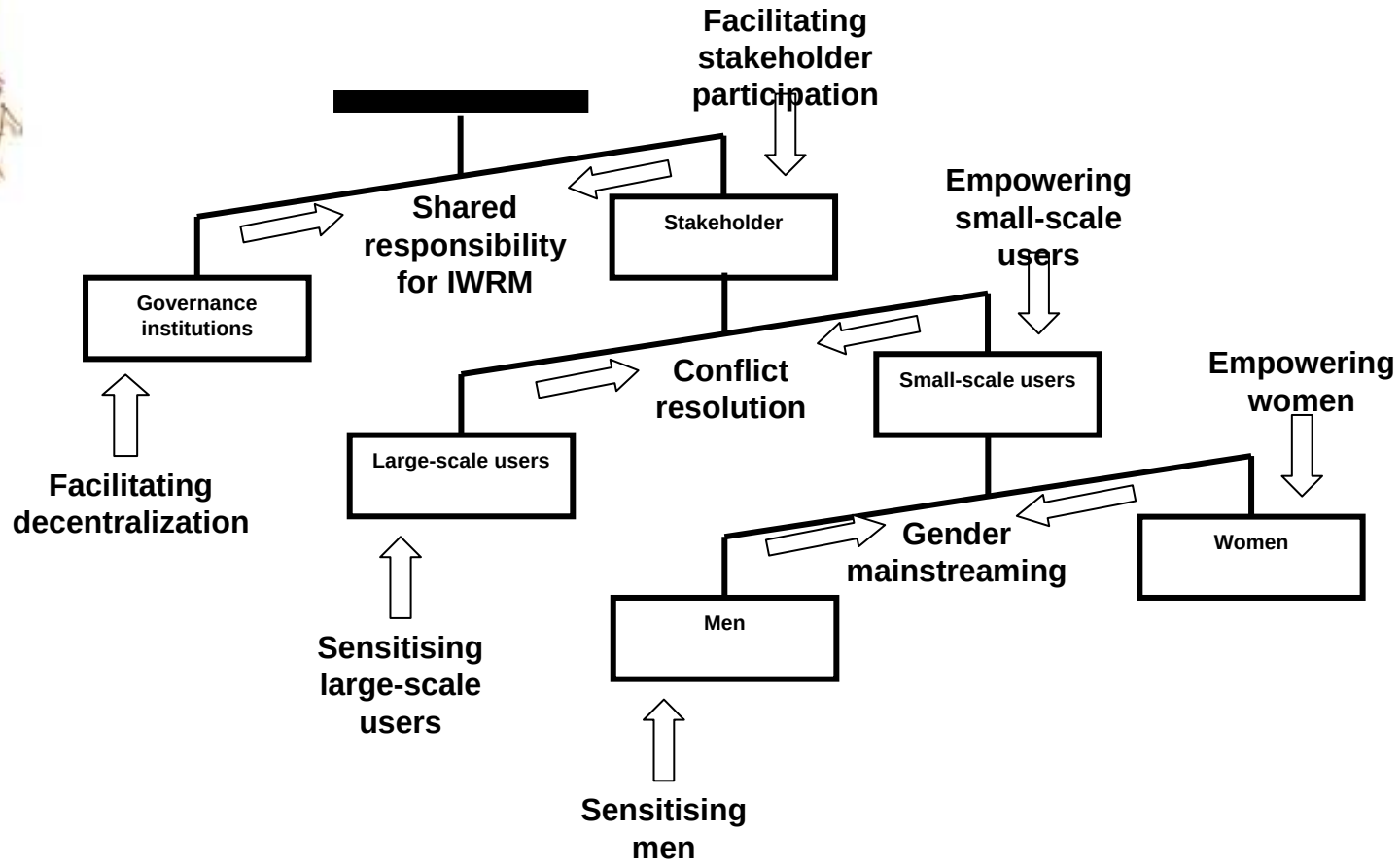
CAPACITY CHALLENGES - WATER RESOURCES MANAGEMENT INSTITUTIONS (2)

- Skills and capacity is required to ensure the implementation of WDM and WC
- Holistic and integrative planning skills are required.
- Significantly greater scientific capacity is required both within the sector as well as at tertiary institutions.
- Strategic management capacity and skills are required to ensure that learning process approaches to IWRM are implemented.

CAPACITY CHALLENGES - WATER RESOURCES MANAGEMENT INSTITUTIONS (3)

- In a region facing issues of priority related to poverty, ill-health (including the debilitating impact of HIV/AIDS), environmental and institutional vulnerability and a dearth of skilled human resources IWRM requires optimally capacitated managers. Thus need a capability approach to skills development.
- IWRM currently hampered by 3 nested imbalances:
  - Biased distribution of decision-making authority
  - Domination by large - scale stakeholders
  - Inputs dominated by men

IMBALANCES TO BE ADDRESSED THROUGH IWRM-RELATED CAPACITY BUILDING



CAPACITY CHALLENGES - WATER SERVICES INSTITUTIONS (1)

- At least 800 to 1200 more civil engineers, technologists and technicians will be required in local government alone within the short to medium term
- The majority of the 3 000 to 5 000 operators working in about 1 500 to 2 000 water and waste water treatment plants must attain the necessary capacity to meet the requirements of the DWQ regulations.

CAPACITY CHALLENGES - WATER SERVICES INSTITUTIONS (2)

- Delivery against the sanitation MDGs requirements alone, at least 1 167 artisans and 1 167 builder assistants (2 334 in total) will be required per day to ensure delivery of VIP structures alone
- At least the equivalent number of artisans will be required to deliver the balance of 2 000 toilet structures, assumed to involve higher levels of technology. These numbers exclude the fact that this occupational category is estimated to be between 17% and 33% (which translates to approximately 750 additional artisans).

CAPACITY CHALLENGES - WATER SERVICES INSTITUTIONS (3)

- Conservatively a cadre of 7 200 Health and Hygiene Promoters are required per day.
- There is a vast under-supply of reticulation plumbers, millwrights and mechanical/electrical maintenance crew.
- There is extremely limited knowledge of the specific requirements for O & M iro alternative sanitation systems and a massive deficit in skilled O & M personnel

CAPACITY CHALLENGES - WATER SERVICES INSTITUTIONS (4)

- DRA facilitators will need to make 13 636 visits per day or close on 2 000 per hour within each seven hour day. This would, conservatively, translate to approximately 2 500 personnel members.
- At least 2 000 supervisors across the different functional areas will be required to oversee the work of H&H promoters, DRA facilitators, artisans and artisan assistants.
- There are significant deficits in management capacity (based purely on existing numbers) within the water sector if international benchmarks are used. Using existing personnel levels as basis, at least 6 000 more management staff will be required.

CAPACITY CHALLENGES - WATER SERVICES INSTITUTIONS (5)

- Asset Management has only recently been driven as a priority within water services institutions. Extremely limited knowledge, skill and capacity to ensure sustainable asset management practices exist.
- There is a dearth of Operations and Maintenance capacity within municipalities. Routine maintenance is seldom planned or undertaken.
- Community capacity to ensure maintenance of water systems (including borehole systems) has been allowed to deteriorate significantly.

SECTOR SKILLS PRIORITIES (1)

There are a vast number of priority needs in the sector:

Technical

- Engineering, fitters & turners, boilermakers, draughtsmen, surveyors, instrument mechanics, valve-hydraulics, welding and plumbing, millwrights, plant maintenance & operator/process control skills, demand management & water conservation skills, water purification & sanitation techniques, water treatment processes, hazardous chemical handling, filtration, waste treatment, waste management & handling (including hazardous), occupational health & safety, heavy duty vehicle drivers, routine & “community” O & M,

SECTOR SKILLS PRIORITIES (2)

- **Planning & Management**
  - infrastructure asset maintenance & management, health & hygiene, project & contract management, planning, strategic management, integrated water resource planning (High level and intermediary category skills)

- **Finances, Procurement & Humanities**
  - Financial management, supply chain, SA needs more effective administrative & political institutions for water planning (level skills)
  - Environmental Health practitioners and Health & Hygiene practitioners (High and intermediate skills categories)

- **Science & Research**
  - Hydrologists, computer programmers, lab technicians, climatologists, microbiologists, biotechnologists, chemists, geologists, engineering technologists, statisticians, limnologists, mathematicians, hydrogeologists, geomophologists, botanists & ecologists, geohydrologists (High and intermediate level skills) The other areas suggested such as water protection, river hygiene are all useful areas for training.

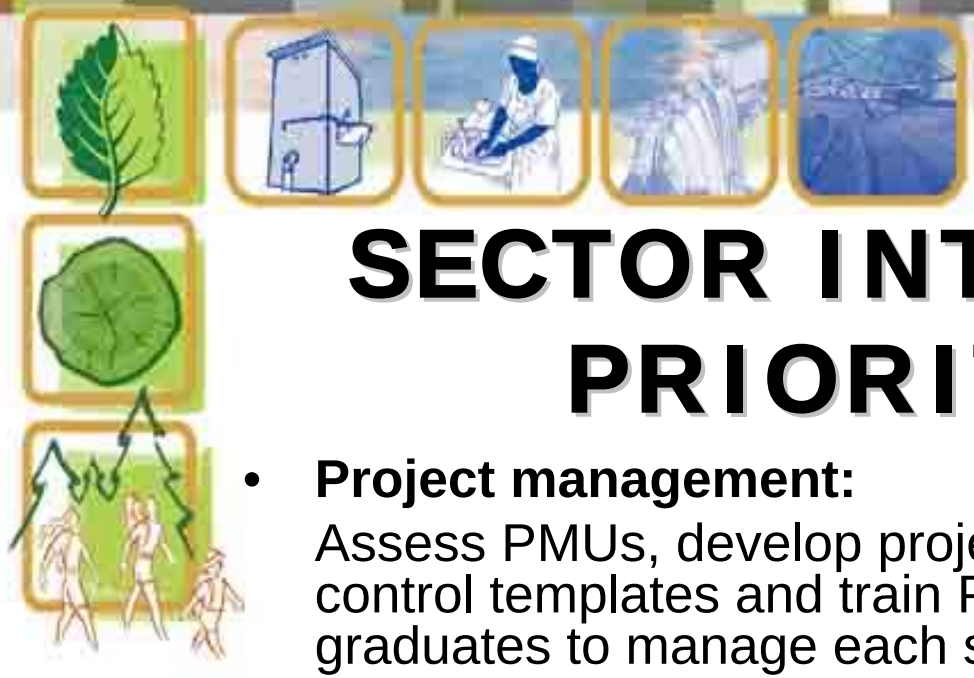
SECTOR INTERVENTION PRIORITIES

- **Operations and Maintenance**

  Assess the specific problems being encountered in ensuring effective O & M systems (primary & secondary reticulation, sanitation systems and community systems and boreholes). Develop appropriate intervention plans and provide capacity support to start implementing sustainable systems and practices.
- **Diagnostics:**

  Assess treatment works and processes, develop inventory of repair, upgrading and refurbishments necessary
- **Compliance:**

  Assess areas where compliance needs to be enforced, develop compliance matrix (what needs to be done); develop processes and train inspectors, laboratory technicians, compliance officers in testing processes where appropriate



SECTOR INTERVENTION PRIORITIES (2)

- **Project management:**

  Assess PMUs, develop project management templates, site control templates and train PMU staff, particularly students and graduates to manage each site tightly

- **Asset management**

  Assess the specific problems being encountered in ensuring effective O & M systems (primary & secondary reticulation, sanitation systems and community systems and boreholes). Develop appropriate intervention plans and provide capacity support to start implementing sustainable systems and practices.

SECTOR INTERVENTION PRIORITIES (3)

- **Artisan Practical Training Centres**

  Contribute to the setting up of a practical hands on training centre for artisans (similar to artisan training centres in Japan)
- **Learning visits**

  Visits to places that are “doing things right” with the absolute requirement that those who undertake such visits are required to develop action plans to implement the elements of good practice encountered AS WELL as are monitored in this regard on a regular basis.