

C3.1 Improved efficiency of use

Characteristics

The key to improved efficiency lies in setting up mechanisms for changing peoples' attitudes and behaviour towards water use. Such mechanisms include:

- *Education and communication*, including programmes to work with users at school, community and institutional level;
- *Economic incentives* including tariffs and charges for water use (domestic, industrial, agricultural) and for provision of environmental services ;
- *Subsidies or rebates* for more efficient water use can be useful.

Regulations and byelaws can be used to set standards for water consumption . These may explicitly aim to prevent "waste, misuse or undue consumption" in public water supply. Byelaws and regulations can also cover standards and use of water appliances, e.g. water fittings and appliances, which are required to achieve minimum standards of water efficiency. Such tools can change behaviour and stimulate the introduction of lower water consumption technologies.

Technologies for reducing consumption vary by application and context - e.g. drip irrigation to replace flood irrigation; and retrofitting and pressure reduction. In agriculture, crop patterns are modified to reduce water use (France, Tunisia). Shifting management of irrigation water at field level to farmer groups (governments retaining bulk supply responsibility) creates the possibility of more efficient use and can make volumetric charging possible.

Use of indicators such as product labelling and access to technical support information is important information and transparency and performance indicators. A useful technique is the *water audit*, which, by using simple procedures, can easily identify gross inefficiencies in water use in, for example, industrial plant.

Improved efficiency of use is achievable in almost all circumstances, but the specific tools vary widely, according to circumstances. For example, tariffs for water use are only effective if linked to volumetric use, with means of measurement such as meters or discrete volume measures.

Lessons learned

- Improved efficiency of use requires a package of many tools, selected to meet the local circumstances and focused on key target groups.
- Education and communication campaigns should be directed towards main users, (e.g. women or farmers' groups or industrialists- according to specific social and cultural conditions)
- Efficiency in use may be undermined by policies in other sectors (e.g. subsidies to energy used for pumping groundwater fo irrigation).
- Water regulations are more effective if widely publicised and firmly enforced.
- Pricing is often effective in improving efficiency in municipal water supply and is being increasingly used in irrigation as management reforms can open possibility of volumetric charging.