

# Fiji

## Country Briefing Paper

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**FROM VISION TO ACTION:  
TOWARDS SUSTAINABLE WATER RESOURCES MANAGEMENT  
IN THE PACIFIC**

**Country Briefing Paper – Fiji**

**I INTRODUCTION**

The Fiji Islands comprise of over 300 islands, 109 of which are permanently inhabited. The majority of these islands lie between longitudes 176° 50'E and 178° W and latitudes 16° S and 20° S. The two main islands, Viti Levu and Vanua Levu support the majority of the total population of 775,077<sup>1</sup> with a sizeable percentage being in the urban centers of Suva (167, 975), Lautoka (43,274), Labasa (24,095) and Nadi (30,884). These islands are predominantly of volcanic origin and rise to an elevation of around 1000m with rivers and streams supporting tropical rainforest on the windward side and extensively cultivated sugarcane farms on the leeward side. All major economic activities, including tourism are based on these two islands. In contrast outer islands vary considerably in both geology and topography from smaller coralline or limestone islands to larger volcanic edifices. They support significant but smaller populations. The total land area of 18 272 km<sup>2</sup> is dispersed in territorial waters of around 141 800 km<sup>2</sup>. The proportion of land to water is only 13% and is even smaller when compared to the even larger Exclusive Economic Zone.

The climate in Fiji is dominated by the Southeast trade winds and this together with topography controls the distribution of rainfall on the islands. Average annual precipitation over the Fiji Group ranges from 1500mm on the smaller islands to over 4000 mm on the larger islands. Topographic effects mean however that much of this falls within the windward side of the islands. The principal influences on this seasonal rainfall pattern are tropical disturbances and cyclones and the El-Nino Southern Oscillation effects intensify these effects.

The wet season from November to April is also the tropical cyclone season. Up to 80% of the annual total rainfall falls during this period. Tropical disturbances, cyclones and high intensity rainfall are frequent causing floods ranging in magnitude from moderate to very severe. The problems associated with floods and droughts are discussed later in this report.

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<sup>1</sup> Population figures imputed from 1996 census figures

As little as 20% of the annual rainfall falls during the dry season (May to October) and is non-homogeneously distributed over time and space. Drought conditions are exacerbated during El-Nino episodes, which lead to considerable difficulties for all sectors of the economy. Decline in agricultural production threatens food security, and poses severe health problems, whilst errant rainfall patterns disrupt hydroelectric power generation on Viti Levu. These are some of the more visible impacts of water shortage over these periods.

All urban centers within Fiji have reticulated water supply systems that are metered and many have wastewater treatment facilities. Over 70% of the population has access to treated, metered reticulated water supply although continuity of supply is perhaps not ideal and maybe in question, particularly in the drier months. This high percentage is achieved because of the concentration of the population in the urban settlements and with urban corridors such as between Lautoka-Nadi and Nausori-Suva. The situation in the rural areas and settlements is different with options of having their own supplies through subsidized small rural surface or borehole schemes. The smaller islands support significant but much smaller populations and have variable water resources relying on conjunctive use of roof catchments, minor streams and boreholes for supply.

Rapid urbanization (from 37% in 1976 to 47% in 1996) together with increases in requirements for industry and the tourism sector has led to demand often outstripping supply. This in turn has led to frequent interruptions in supply or in many places long periods with no supply. Just over 90% of the urban population<sup>2</sup> is reputed to have access to clean piped water supply, in terms of reliable supply the much less. Government's immediate to medium term strategy is to improve infrastructure such that it does not become a major impediment to economic growth in the future and adversely affect health.

There has been a concerted effort at the development of Master Plans to address key areas needing additional resources but implementation is capital intensive and requires significant levels of funding. Whilst these plans are being considered for loan funding one major constraint not significantly being addressed is the question of cost recovery, the cost to consumer for water being low compared to the region<sup>3</sup>. Government's commitment to deliver water for all and to maintain current cost structure means therefore the developing of better efficiencies and reducing wastage.

Development of water resources management strategies within Government are thwarted by a lack of clear comprehensive legislation encompassing water compounded by the number of agencies that deal with water related matters at one level or another. These comprise the Ministry the Works, the Ministry of Lands & Mineral Resources, Health, Regional Development, Department Land Use and Planning, Agriculture and Irrigation not including various NGO's.

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<sup>2</sup> 1996 Census

<sup>3</sup> add comparative data for water costs in a table (if available)

Several good attempts have been made in the past to develop coordination between agencies and consider development of appropriate legislation. These have often bogged down in beurocracy. The new vision for sustainable development of this valuable natural resource depends on the development of strong political will which is related to highly sensitive land issues.

## **II. THE NATIONAL CONSULTATION PROCESS**

The development of this paper and the process towards this consultative meeting exemplifies clearly the basic problems with coordination of various agencies related to water management in Fiji. The Directorate of Water and Sewerage (DWS) of Public Works Department plays a major role in water and wastewater services. Hence a first draft of the country briefing paper was prepared and circulated with a formal invitation to Mineral Resources Department, Drainage and Irrigation of the Ministry of Agriculture, National Planning and Ministry of Health for input in a consultative meeting. The meeting took place in with 7 participants in the absence of the representative of the Ministry of National Planning. Amendments, additional inputs and editing of the original draft were requested with final text being finalized as a joint effort. The representatives agreed that this group in future would constitute a core committee to look at development of future strategies with regard to water resource management in Fiji

Similar difficulties have been raised during earlier attempts to arrange coordinated meetings and this “step” needs to be overcome for real progress to be made.

## **III VISION, ISSUES AND CONSTRAINTS**

Government’s vision of water resources is ‘to provide safe, adequate and affordable water and wastewater services for the total population of Fiji while equitably meeting the needs of all other users (food production, environment maintenance, energy generation) in a sustainable manner’.

Although Fiji is blessed with plentiful supply of fresh water with high annual rainfall, the spatial and temporal distribution causes frequent shortage and excesses (droughts and floods). The collection, treatment and reticulation of potable water during these events can be, and has been a financial burden. For example during droughts cartage of emergency water supplies to remote locations and outlying small islands is a necessary burden. During the last two decades the four ENSO related droughts (1982/83, 1986/87, 1992/93, 1997/98) the cost of emergency water supply was in the order of a million dollars or more per event. Significant costs are also incurred annually in the cartage of water due to inadequate infrastructure and during the more normal May to October dry season.

Fiji is also a collection of islands of various geological types, size and topography, each of these factors influencing the availability of water resources. In fact one could assume and quite correctly so that water is perhaps a major constraint to sustained habitation of

the outlying islands and the reason why only a 100 or so out of the 300 islands have permanent populations.

Extreme rainfall deficiency during the dry season is invariably linked to El-Nino Southern Oscillation climate phenomena. Droughts are slow onset and their severity is difficult to predict. Public participation in putting in place preparedness and adaptation measure is difficult, as there is a large degree of uncertainty. One rainstorm may alleviate all the water shortage in a matter of a day or even hours. Past experience, particularly with the 1997/98 drought, demonstrate the need for early decisive action at the onset of drought to minimize the losses and maximize the use of available water resources. This requires the development of public education and information dissemination mechanisms.

Whilst government's vision and action plans with regard to water relate principally to the provision of adequate, reliable and safe supply. It falls short of addressing water and water use in a holistic and integrated fashion considering the multitude of water use from agriculture, commercial irrigation, bottled or "mineral water", energy and environmental considerations and the differing sources. Assessment of water resource be it ground or surface water often has far less and actually annually decreasing budgets, the bulk going to the development of infrastructure and supply.

### **III.1 Water Resources Management**

The Director of Water and Sewerage (DWS) in the Public Works Department has the overall responsibility for Fiji's Water supply and Sewerage services. He is responsible for the design and planning of water supplies and sewerage. The hydrology section under the guidance of the DWS provides hydrological information related to surface water for Fiji. The Mineral Resources Department (Ministry for Lands & Mineral Resources) assists in the planning, assessment and development of ground water resources. Other Ministries involved in the water sector include the Ministries of Fijian Affairs and Regional Development, Ministry of Health and the Ministry of Primary Industries. In many ways these pieces of legislation impact through either ownership of rivers, riverbanks, land, or dams. This wide involvement sometimes leads to lack of co-ordination of development projects.

Legislation relating to water resources in Fiji are outdated, but has served well to date largely because of the non-competitive environment and generally plentiful supply. The Water Supply Act, Rivers and Streams Act, Native Lands Act, Crown Acquisition of Lands Act, The Electricity Act and the Agricultural Landlord and Tenants Act are some of the laws in question. Groundwater is however presently not covered under any specific legislation. Commercial use of water and competition for resources, conflicting use of rivers and other sources, impacts of upstream industries, catchments areas and landowner demands are however on the increase and it is readily becoming apparent that current legislative instruments are in urgent need of revision.

A case in point is the commercial use of water for sale as bottled “mineral water”, where industry has sought a protection zone for the protection of an aquifer and objected to similar or other industries upstream. For such an industry protection of “source” is a critical factor to long-term sustainability. Another recent case involves approvals or conditional approvals by one authority of poultry breeder farms adjacent to boreholes used for public supply. Pressures on available land as populations grow or shift will bring into focus other similar constraints that require a well thought management strategy backed by complementing legislation.

The Public Works Department operates and maintains 13 regional, city or town water supply systems which have full treatment with water quality is generally equal to or better than those prescribed by WHO Guidelines. A total of around 170 000 cubic meters per day is produced serving approximately 610 000 people. An additional 19 smaller metered schemes produce 15 000 cubic meters per day and serve 49,000 people. A large proportion of water is drawn from surface water sources whereas a small fraction of Fiji’s reticulated supply comes from ground water. However, the situation is changing rapidly as knowledge of groundwater resources grows and ground water is beginning to be regarded, when appropriate, as a viable option. The advantage of gravity flow system is the economics. Costs of electricity or fuel for pumping groundwater can be substantial. However increased agricultural and other use has meant that leases for catchments areas attract premium rates and main rivers are often polluted and the trend over recent years has been for settlements, villages and communities to consider groundwater in conjunction with roof catchments as a viable alternative.

In rural locations, particularly on small islands, ground water is used conjunctively with roof catchments and surface or stream sources. A majority of these supplies are managed and maintained by the local community and on larger islands this is often with assistance from the Public Works Department (Rotuma, Vanua Balavu, Ovalau). Since 1965 Government has helped in providing basic water supplies in rural and island areas through subsidized self-help schemes under which government meets two-thirds of the cost of projects. Similar schemes termed the borehole subsidy schemes assist in the drilling of boreholes in rural areas. Tests on water from some of these systems indicate contamination of drinking water from human and animal activities or from over pumping. Measures such as fencing off the area around the well, covering sources, replacing open water holes with properly constructed and lined wells, installing hand and solar pumps instead of using unclean buckets and relocation of latrines and animal pens from near sources will help reduce contamination.

Significant educational and awareness programs are needed particularly in smaller rural, village and semi urban communities to develop a conservation attitude with regard to water. The fact that water is a diminishable and pollutable resource needs to be stressed together with the need to develop low cost solutions. Wells on many small islands have been found to be contaminated with faecal coliform<sup>4</sup> and due principally to a lack of sanitation, habits and awareness. There is an “aid recipient” mentality on the part of some where high-tech solutions such as boreholes are sought where simpler solutions such as

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<sup>4</sup> Islands off northern Vanua Levu, data available on request from Mineral Resources Department

conjunctive use of water from a number of sources needs to be readvocated, with simpler, more sustainable solutions.

With an increase in population, urbanization and industrial growth there are increased demands for adequate quantity and quality of water. Current sources will have to be developed further or new ones established to cater for the growing demand and regional master plans have been developed for all populated centres. Much hydrological, hydro-geological and meteorological data will be needed and utilized for these larger capital-intensive regional schemes.

Whilst still in its infancy, water for use in agriculture could play an important role in the drier parts of the main islands and lead to better and year round crop yields. Groundwater as well as surplus surface water could be used with significant improvements in crop yield.

### **III. 2 Island Vulnerability**

Fiji's geographic location, its geological and physiographic characteristics together with the size of the islands and its oceanic environment results in various hydrological regimes. High annual, inter-annual and seasonal variation of rainfall makes Fiji particularly vulnerable to floods and droughts. Cyclonic storms produce damaging winds and extremely high rainfall. Up to 1000mm of rainfall has been recorded over 24 hours in cyclonic storms. Disruption to support infrastructure such as communication and electricity is common.

The three most recent droughts (1982/83, 1986/87 and 1992/3) associated with the ocean-atmosphere coupled climate phenomena were of increasing intensity. Intensity of floods displays a similar trend.

Climate change will have the most adverse impact in the small island states especially the poor within the developing countries are the most vulnerable with the least ability to cope. The third Assessment report of IPCC indicates that anthropogenic influences will change the earth's climate system and:

- ?? The earth has warmed 0.6 +/- 0.2°C with the last two decades being the warmest of the last century.
- ?? Precipitation patterns have changed with some areas becoming wetter and others drier accompanied by heavy precipitation in some regions
- ?? The magnitude, frequency and persistence of ENSO phenomena appears to have increased in the last few decades
- ?? Sea level has risen 10 to 20 cm since 1900 ( polar glaciers are retreating and arctic ice thickness has decreased
- ?? Bird migration patterns have changed, birds are laying their eggs earlier, growing season in Europe has lengthened by 11 days during the last 30 – 40 years and there is pole ward migration of plants and insects.
- ?? Economic losses due to extreme weather events have increased substantially in recent decades.

These are authoritative estimates. Social and economic systems must be robust to withstand meteorological and hydrological extremes and be resilient for not only rapid recovery following disasters but rapid adaptation in the event of climate change induced impacts. Shortage of water for hydropower generation and crop production during the recent droughts is an indication of Fiji's vulnerability.

Fiji National Disaster Management Council has disaster management and contingency plans in place to combat against such events. Strategies are in place for preparedness and mitigation measures. It is likely that with climate change the intensity, if not the frequency, of disaster events will increase.

The recent strengthening of the office of the NDMO and its elevation to a full departmental status within the Ministry of Regional Development augurs well for a more systematic approach to disasters and disaster risk management.

### **III.3 AWARENESS & CONSULTATIONS**

Government's policy on water resources management reflects its commitment to sustainable development and a growing awareness to the increasing population and its consequent demands for a better lifestyle, health and environment. This has been the basis for the development of master plans for water resources development. These plans have been developed to meet the medium and long-term needs with both the community and the environment in mind. Where possible satisfactory arrangements with stakeholders are negotiated viz. land, easements, catchment areas, and location of storage facilities.

Development of irrigation schemes and hydropower generation systems follow similar procedures – where consultation with all stakeholders takes place well before any works are carried out. By legislation an environment impact assessment (EIA) has to be carried out. The EIA report highlights any deficiencies and or weakness, which are addressed before the project is approved. In this process all stakeholders become involved well before the project is undertaken. It is a prerequisite for project development and governed by legislation.

Although changes are emerging, social and cultural sensitivities discourage females from taking up engineering and related professions in the Pacific Islands and Fiji is not an exception. However during the development consultation process and EIA all concerned stakeholders are consulted.

In the area of water conservation, sanitation in matters related to safe use, storage and disposal of wastewater significantly more can be done by Government in raising the level of awareness within the general public, and particularly villages and settlements, both on the mainland and small islands. A general cursory look at many villages shows lack of use of much of the available roof space for water catchment, and facilities are in poor

state of repair. This awareness and education would require coordination of efforts between the Ministries of Health, the Department of water & sewerage and NGO's.

### **III.4 TECHNOLOGY**

Reticulated water supply in Fiji has full treatment with pH correction, flocculation, sedimentation, filtration and chlorine is added for disinfecting. Where possible and economically viable gravity supply system as opposed to pumping is preferred. Water from all urban water supply systems is routinely analyzed for quality (pH, residual chlorine, and colliform) every month.

Wastewater and sewerage (urban) is treated before being discharged. Low energy waste treatment lagoons are preferred to high-energy mechanically driven aeration treatment where possible. Availability of economically suitable land for this type of waste treatment facilities in urban centers is restrictive. Treated waste discharge is routinely analyzed for quality by the national water quality laboratory to monitor satisfactory standards in accordance with accepted international guidelines.

Although Fiji has advanced access to technology they are not necessarily applicable, as supplies and support is invariably from abroad and in many cases it can be economically restrictive.

Simple technology that balance modernity, economy, robustness and suitability for Pacific Island environment is needed, to this end home grown as opposed to imported high tech equipment is desirable.

For irrigation and hydropower runoff the river systems are preferred however because of seasonal deficiencies in many cases capital-intensive storage reservoirs are the only option.

### **III.5 INSTITUTIONAL ARRANGEMENTS**

Responsibility for water resources development and management is vested in a number of government ministries and statutory authorities, each with specific interest. There are procedures for areas of common interest but these are at the project implementation and not at policy level. The need of a comprehensive national policy or strategy for better management of water resources crops up time and again.

The Director of Water and Sewerage of the Public Works Department (PWD) has over all responsibility for Fiji's water supply and sewerage services. The Land and Water Resources Management Division of the Ministry of Agriculture has responsibility for river engineering, irrigation and drainage works. Their operation includes the protection of coastal agricultural land from saline intrusion and river engineering for flood protection. Flood forecasting has been the traditional responsibility of the hydrology section of PWD. The Fiji Electricity Authority a government corporate body operates commercial hydroelectricity generation schemes, while development of small rural

hydropower schemes are undertaken by the Department of Energy. The Mineral Resources Department carries out groundwater assessment and development. It has a policy mandate for work in this area and possesses physical capability but has no legislative backup to develop formal regulations and policies with regard to resource development, management and environmental control.

The need for an apex water authority to evaluate priorities, solve conflicts or issue licenses is gradually emerging. The need for some workable institutional arrangements endowed with resources and an appropriate legislative instrument is required to address these new issues.

The last major attempt to draw up comprehensive water legislation was under the auspices of FAO with an initial report concluded in 1975 and a substantial discussion paper in 1987. An attempt to put in place legislation drawn by Prof. Clarke failed to get the required approval of the Great Council of Chiefs. Little has been done since to improve legislation or coordination mechanisms. As of 2001 there is Cabinet approval to set up a committee to draw up a Strategic Water Resource Management Plan, which would involve the setting up of an authoritative regulatory body to take care of licensing and related matters. However there are a number of contentious and conflicting social, cultural and economic issues e.g. royalty payments, land issues. This committee has however only met once and realised immediately that the problem of water management. Attempts are being made to urgently revive the process and even with external assistance.

Another critical area of concern within both water development and assessment areas is the lack of skilled professional staff, be they engineers, hydrologists or hydrogeologists. In many cases donor assistance has been required to get expert help to design and implement works. Whilst this has helped considerably, this assistance without a balanced institutional capacity development in government will not lead to sustainable capabilities.

### **III. 6 FINANCE**

Current government is committed to improving the efficiency of water and wastewater services and the option of introducing a commercial oriented entity has not been ruled out.

The Fiji Public Works Department supplies potable water to over 80% of the population in Fiji. This high percentage is achieved only because of the high proportion of the population in the urban settlements. As indicated earlier rural and small island settlers have options of having their own supplies through subsidized small rural, surface or borehole schemes.

For the period 1991 – 2001, Government spent \$11.2m to subsidize 741 rural self-help schemes and around \$2.8m on 2535 bore hole subsidy schemes with no returns to Government. Since the inception of the scheme in 1965 some 2200 such self-help schemes and around 2600 bore hole schemes have been completed in an effort to meet the water demands.

The last four years has seen significant increases in capital investment by Government in water supply and wastewater management (\$F 12 million in 1996, \$22M in 1999 and \$22 Million in 2000), whilst revenue has been around \$F10 million per annum. This shows significant income/revenue discrepancies.

With the current global trend of reducing Government expenditure and users pay for services rendered there is a need to consider the charging of economic prices for water if only to enable a sustainable maintenance and operational capacity.

The argument that water is available free from nature does not hold when it has to be processed or treated and transported to the users. The cost for operation and maintenance of these facilities must be met and ideally the system of user pays makes economic and logical sense.

Water and Sewerage charges are levied in Fiji at the following rates: -

Domestic Water Supply	
0 – 50 units	\$0.153 per unit
50 – 100units	\$0.439 per unit
Over 100units	\$0.838 per unit
Commercial	\$0.529 per unit
Special Reading	\$9.88 each
Reconnection fees	\$10.00 each
Meter Testing Fees	\$12.74 each
New Connection Fees	
Domestic	\$21.95 each
Commercial	\$100.98
Sewerage	
Domestic	\$0.200 per unit
Commercial	Assessed Individually

It is worthy to note that the last increase in water rates with the exception of the introduction of VAT in 1992 was in 1984. With two changes in government VAT was removed and replaced. Had the charges for water rates kept up with the rate of annual inflation the current price of water would be much higher. Charges for government's use would also be necessary, currently government institutions do not have to pay for water use. To recover operation and maintenance costs and costs for future commitments water charges would have to be doubled.

It follows logically that if operation and maintenance (O&M) costs are not met research and development (R&D) cannot be undertaken as desirable or even required. The very

basis of R&D is for improvement in the services and development of new and efficient techniques.

Substantial government investment in infrastructure for irrigation and crop production has been made. There are over 3,000 ha of rice land with irrigation facilities to improve rice production. Three reservoirs with storage capacities ranging from one to three million cubic metres, and several run off the river systems are used for double cropping of rice. Rice production remains low and well below half of the national demands. There are potential to expand the systems for increased production. Cost recovery for water use are levied at \$20 to \$40 per ha and this does not meet even the maintenance and operation costs let alone the capital investments.

In addition 1000 ha of land is under various types of irrigation for the production of crops, other than rice for local and export markets. Most of these are pumped sprinkler systems using surface and unconfined ground water sources. No charges for water are levied. The infrastructure in the form of pumps and piping installed by government, once commissioned and operational is taken over by farmers. Operation and maintenance of the system is the responsibility of the users.

#### **IV PLAN OF ACTION**

Government initiated various activities including hiring of consultants and acquiring aid to provide assistance with issues related to water resources over decades. These include: - legislation, flood forecasting, dredging, irrigation and watershed management, water supply master plans and so forth. Each of these arose out of necessity after for example floods and droughts. However follow up mechanisms have in most cases been weak and many of these have failed to meet the recommendations.

The most pressing and politically sensitive issue of requirements for adequate water supplies has advanced well. Master Plans have been developed for improvement and expansion of water supply systems in all urban centers in Fiji. This expansion will also provide an opportunity for inclusion of rural dwellers to reliable regional, city or town supply systems.

These master plans take into account projections of population increases, industrial development and other demands that are likely to arise. In addition vigilant monitoring of wastage is already in place. It is envisaged that the current high losses from reticulation systems will be reduced to acceptable levels in the foreseeable future.

It is clear that there are multiple agencies involved in the water sector and co-ordination amongst these agencies is necessary. The setting up of a committee to draw a Strategic Water Resources Management Plan (SWMP) for Fiji is a step in the right direction. The SWMP will address, it is envisaged provide guidelines to address all issues relating to sustainable water resources planning and management.

Some of the answers to Fiji's water, waste water and hydrological are:

- ?? Insufficient level of funding for the required development and levels of services. Additional funding including aid needs to be sought with urgency.
- ?? Increased attention is required in the operation and maintenance of water supply and sewerage systems for increased reliability and efficiency
- ?? Vigilant hydrological and geo hydrological monitoring with an active national water resources assessment for planning and management. Water resources data for all purposes viz. water supply, irrigation, and drainage, flood control, river engineering, waste disposal.
- ?? Standardize rural water supply design and construction, centralize it's administration and train local villagers to operate and maintain their own schemes.
- ?? Ensure environmental issues are adequately investigated and suitably resolved.
- ?? Establish a workable catchment protection policy based on sound watershed management practice with effective policing and monitoring.
- ?? Ensure activities in catchments such as logging and cultivation are organized, planned and carried out with best practices.
- ?? Draw up and enact appropriate and practical legislation in consultation with relevant stakeholders.
- ?? Cooperate with regional and international organizations to take advantage of relevant information such as the impact of climate and severe weather events. Shift of attitude from a society that learns from mistakes to one that learns not to make mistakes.
- ?? Above all and foremost set and intensive training for engineers, hydrologists, technicians to build endogenous capacity and self-reliance.

## **V. CONCLUSION**

Fiji's water resources require orderly and planned development for which adequate good quality data is required for the intended purposes (water supply, irrigation, hydropower development, wastewater and waste disposal). The infrastructure currently in place needs upgrading and improvement to meet the expanding demands. Sustainable use of the limited water resources will inevitably be linked to the impact of climate. Every effort will have to be made to mitigate against the negative impact and take advantage where possible. Adaptation strategies need to be developed where mitigation is not possible. Demand management for water resources be it for irrigation, water supply or hydropower may have to be given higher priority particularly in view of the climate change impact assessed by the authoritative IPCC.

An intensive programme on accurate monitoring of all the activities is vital for guidance and further action.