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INVESTMENT IN LAND AND WATER

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Preface

One of two themes for the forthcoming ***World Food Summit: five years later (WFS:fyl)*** is ***Mobilizing Resources to Fight Hunger***. FAO is concerned that investment in agriculture continues to decline instead of growing as demanded by the World Food Summit in 1996. The incremental requirements of agricultural investment in developing countries are estimated at US$30.7 billion per annum – of which approximately one-third is needed for irrigation. The evidence suggests, however, that agricultural investment has progressively declined rather than increased. For instance, the share for agricultural lending in the loan portfolio of The World Bank fell below 10 percent in the year 2000 compared with 40 percent 30 years ago. One possible cause for declining investment in agriculture might be the historically poor performance of such investments and the non-recognition of their secondary benefits. There is also a shift from public to private investment which does not fully compensate the decline.

FAO is therefore striving to reverse the trend of declining investment and to draw attention to the fact that investment in Land and Water is a good investment, if managed properly. For this purpose, the Regional Office for Asia and the Pacific in close collaboration with the Land and Water Development Division in FAO Headquarters organized and conducted the Regional Consultation on Investment in Land and Water. Its objective is to raise awareness and to enlist and enable the support of partners and member countries to attain enhanced commitment and innovation to finance sustainable agricultural development and food security.

The consultation was held in FAO's Regional Office for Asia and The Pacific in Bangkok, Thailand, from 3 to 5 October 2001. High level government officers from 12 countries in the region participated together with observers from the Asian Development Bank, the International Water Management Institute (IWMI), the Mekong River Commission (MRC) and various Thai government agencies.

This publication contains the papers presented at the meeting as well as the highlights and recommendations for enhanced investment in Land and Water which resulted from the group and plenary discussions. The Consultation adopted the ***Bangkok Declaration*** which urges Heads of State and Ministers of agriculture, rural development, planning and finance in the region to alert and motivate the necessary political will and investment commitment, to form policies and take initiatives to create an enabling environment for sustainable land and water management and advances in agriculture and rural development leading to comprehensive food security.

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BACKGROUND

One of the two themes for the forthcoming ***World Food Summit: five years later*** *(WFS: fyl)* is *Mobilizing Resources to Fight Hunger*. FAO is concerned that investment in agriculture continues to decline instead of growing as demanded by the World Food Summit in 1996. The Land and Water Development Division at FAO Rome therefore initiated a process to enlist and enable the support of essential partners to attain enhanced commitment and innovation to finance agriculture and food security. The Regional Consultation on Investment in Land and Water conducted by the FAO Regional Office, Bangkok is a part of this process, to highlight the crucial importance of this theme for regional food security.

Arrangements and participation

The Regional Consultation was held from 3 to 5 October 2001 at the FAO Regional Office for Asia and the Pacific (RAP) in Bangkok, Thailand.

In his opening address, R.B. Singh, Assistant Director-General and FAO Regional Representative for Asia and The Pacific, highlighted the present situation and the prospects for food security, production and poverty in the region. He reported on the status of investment in land and water, future needs and investment mechanisms and on a required policy framework for investment in land and water towards sustained food security and prosperity. He emphasized the need for an integrated approach to land and water management, called for an investment strategy and stressed the need for a flexible and participatory approach to capture the new technological, management and development opportunities by increased investment in land and water conservation, improvement and utilization. He called upon each nation to adopt and implement a national vision on investment in land and water.

The three-day meeting accomplished the following activities:

- summary presentation of resource papers;
- summary presentation of country specific reports from 12 countries in the region;
- group discussions (two groups) on selected topics;
- preparation of conclusions and recommendations and discussion in a final plenary session; and
- preparation, discussion and adoption of the **Bangkok Declaration on Investment in Land and Water** as an essential input to the statements by country level delegations which will participate in *WFS: fyl*.

The Declaration immediately follows this summary. The agenda is given in Annex I; participants are named in Annex II.

High level government officers from 12 countries attended the Consultation: Bangladesh, Cambodia, China, Democratic Peoples' Republic of Korea, India, Indonesia, Laos, Pakistan, Republic of Korea, Sri Lanka, Thailand and Viet Nam. In addition to FAO, representatives of international organizations such as the Asian Development Bank, the Mekong River Commission (MRC) and the International Water Management Institute (IWMI) attended as observers.

HIGHLIGHTS AND RECOMMENDATIONS

Highlights

Land and land quality

The total land area of the Asia and the Pacific region is 3 001 million ha or 22.9 percent of the world's land area. However adverse soils, climate and topographic factors limit the possibilities for sustainable agricultural production in about 86 percent of the region.

The consultation concluded that loss of potential soil productivity due to erosion and soil nutrient depletion, with an increasing net negative balance in the soil is the biggest threat to meeting the region's future agricultural needs. Furthermore loss in soil productivity in both the commercial and subsistence sectors causes high additional national costs, such as increased food imports, reduced exports and higher social welfare costs for those who fall below the poverty line.

Land and water investment decisions also have serious implications for global warming and climate change. The potential for carbon sequestration in soils may be as high as 40 percent of the total annual atmospheric increase in CO_2 concentrations, which may be increasingly tapped through multiple cropping and alternate multiple land use systems. Water management practices can greatly impact methane emission from paddy fields – an important point of consideration for Asia and the Pacific region, as about 90 percent of world's rice lands are here.

Scarcity of land and water

The consultation recognized the crucial role of intensified utilization of land and water resources for ensuring food security, poverty alleviation and broad-based rural development. Estimates show that between 1997 and 2030, about 80 percent of projected crop production growth in developing countries will come from intensification as higher yields (69 percent) and cropping intensities (11 percent), with only 20 percent coming from arable land expansion. The share resulting from intensification will exceed 95 percent in land-scarce South, Southeast and East Asia.

Similarly in the water sector, by the year 2025, 48 countries with a population of more than 1.4 billion persons will face water stress and scarcity. The per capita water availability in Asia decreased from 9.6 to 3.3 km^3/year between 1950 and 2000. Increasing water scarcity will result largely from rapidly growing demands for agricultural, industrial and household purposes. Degradation of irrigated land due to waterlogging, deterioration of water quality, upstream land degradation, seasonal flooding and insufficient river flow will aggravate water shortage problems. The consultation viewed with concern the threat to agricultural production due to the water shortage: it is of particular concern because this sector accounts for 80 percent or more of total fresh water use in these countries.

Land improvement in less favoured rainfed areas

Farming systems in less favoured areas dominate mixed farming and other practices that contribute to soil, nutrient and water conservation. Hence major productivity improvements will have to come from improved natural resource management practices, technologies for conservation tillage and integrated watershed development.

Integrated watershed development has become the preferred approach for developing rainfed areas in many Asian countries with the twin objectives of resource conservation and development. Apart from direct benefits to the participants, the impact extends in terms of domestic production, enhanced food security, reduced market fluctuations, income and employment generation and foreign exchange savings.

Low and declining investment in agriculture

The already low and further declining trends in investment in agriculture through both domestic and external resources in most of the countries are matters of great concern. When measured in constant 1995 price, official development assistance from bilateral and multilateral donors is 8 percent below 1990 levels. The proportion of sectorally allocable aid reaching agriculture, forestry and fisheries fell to 20 percent in 1987-1989 and then to 12.5 percent in 1996-1998. In financial year 2000, World Bank lending for agriculture and rural development was its lowest ever in both percentage terms and absolute amounts. Current levels of foreign aid at 0.24 percent of annual GDP, fall short of the 0.7 percent target set by developed aid-donor countries. Actual aid falls short of that target by US$100 000 million a year. The share of agricultural lending in the loan portfolio of the World Bank fell below 10 percent in 2000, as against 40 percent 30 years ago. The World Commission on Water considers investment levels to be less than half of that needed (about US$180 million per year) to meet minimum water, sanitation and nutrition requirements in developing countries by 2025. Recent studies indicate that the allocations for irrigation schemes and operation and maintenance are less than 50 percent of what is required.

It should be recognized that investment in land or water development is not just an investment in one item – it entails a chain reaction of investing in a whole range of elements such as farming practices, plant varieties, nutrients, human resources, the broader infrastructure and conducive policies. The Governments are committed to equity-led development goals. In order to enable land, water and labour resources to make their full contribution to achieve these goals, it is necessary to continuously enhance their productivity. This will not simply happen without increased investment in land and water development and associated policy reforms for realizing their full benefits and returns.

Investment requirements

Investment requirements can be grouped into two interdependent categories: the monetary requirement and the human resource and attitudinal requirement. Land intensification needs may generally encompass investments for:

- soil fertility maintenance by adequate levels of balanced fertilization and management of the structural, textural and organic health;
- land shaping for adoption of minimum tillage and other land operation practices;
- soil conservation and afforestation measures;
- reclaiming acid, saline, alkali soils, ravine areas, stabilizing sand dunes, waterlogged and other such degraded land; and
- enriching the biological health of soils.

Likewise, investments in water resources, supply and use are required for:

- design and construction of large, medium, small and micro irrigation schemes;
- rehabilitation, upgradation and modernization of existing irrigation schemes and systems;
- developing new and tapping unutilized water resources;
- developing river basin-based integrated development and management of water;
- prevention of water pollution and deterioration of water quality; and
- integrated watershed development encompassing upgradation of arable land, non-arable land and underground water, particularly in rainfed areas in arid and semi-arid zones.

Returns on investment in irrigation

A World Bank study of 208 World Bank funded irrigation projects implemented and evaluated between 1950 and 1993, with loans of US$31 billion, indicated comparable satisfactory rates for agriculture as a whole and an all-project average of 65 and 76 percent respectively. The internal rate of return (IRR) for agriculture as a whole was 13 percent and the all-project average was 16 percent. Weighting irrigation projects by area served raises their average IRR to 25 percent with 84 percent of the projects rating satisfactory.

Private investment provides all financing for about 20 percent of the total area currently irrigated. The share of private investment in the remaining 80 percent is approximately half of total investment.

The high population absorptive capacity of irrigation limits the migration of growing populations to areas of greater environmental risk. If additional water for irrigation – 17 percent by 2025 – is not forthcoming, the increased burden on rainfed agriculture to meet demand will be enormous and more detrimental to the environment with far more land clearance than at present.

Producing more rice with less water is a formidable challenge for the food, economic, social and water security of Asia. A comprehensive reform package is needed for improving the performance of rice irrigation systems. The FAO estimate for increased irrigation efficiency in developing countries calls for a rise from 43 percent in 1995/1997 to 50 percent by 2030. This means investing in generation of water saving technologies and practices and their extension, maximizing returns from both water and land.

Expansion of irrigated area

Between 1961 to 1963 and 1995 to 1997, irrigated areas in developing countries increased at an annual rate of 1.9 percent to about 197 million ha, representing three-fourths of the world's irrigated area, of which 74 percent is in Asia. Asia registered the largest increase with 70 million ha in India, Pakistan and China. However, the area of irrigated land is predicted to increase by 0.6 percent per annum to 242 million ha in 2030. Declining and insufficient investment in agriculture and water sector reflect this decreasing trend in irrigation expansion. This trend does not augur well for meeting the expected food demands in the future and should be reversed.

Irrigation sector reforms

Irrigation sector reforms should be part of a more general reform of water resource management, in which issues of water allocation, water rights, ownership of transferred assets and financial management of operation and maintenance of the irrigation systems are addressed. Wrong incentives such as poorly targeted subsidies or inappropriate water pricing systems can induce overuse or wastage of water and eventual groundwater depletion and deterioration of water quality.

Participatory irrigation management (PIM) and irrigation management transfer (IMT)

In Asia, where older public sector irrigation schemes are more than a few decades old, the issue of rehabilitation, which is related to those of operation and maintenance and modernization, is becoming increasingly important. Initial system designs may represent a severe constraint to the adoption of new and more flexible operational procedures required for present and future service requirements. Merely restoring the systems to their initial state will not be sufficient. Appropriate Participatory Irrigation Management (PIM) and Irrigation Management Transfer (IMT) reforms can be instrumental in ensuring that the systems are responsive to farmers' needs. The new ideas about decentralized irrigation improvement funds exemplify "smart subsidy schemes" that encourage investment by water users in maintaining and upgrading their schemes. Privatization of minor irrigation in Bangladesh models how policy liberalization accompanied by technical support can promote increased smallholder investment in irrigation and better management. Small-scale irrigation schemes can implement efficient and flexible distribution and management regimes.

Rural micro-credit institutions

Governments and international donors have generally avoided investment in reforming rural financial systems and developing credit facilities for small farmers with little or no collateral. Uncertainty of land tenure is a deterrent to long-term and sustainable investment in land. Ambiguities relating to rights of land, water and trees contribute to environmental degradation and curb investment desires. Other institutional aspects include the absence of clear community mechanisms for upkeep of public assets and infrastructure, lack of financial services and the marginalization of women. The absence of microcredit institutions discourages investment in soil and water conservation measures, particularly if payback periods are relatively long. There is an urgent need to foster the growth and viability of rural microcredit institutions.

RECOMMENDATIONS

Political will and investment commitment: Economic recession in the 1990s, coupled with globalization leading to structural adjustment programmes, has constrained national resource devolution for land and water investment programmes which will adversely affect production prospects in the future. Donor priorities in lending for infrastructure and social sectors have changed, further compounded the problem. However, intangible gains, positive externalities and environmental payoffs resulting from land and water development projects must be recognized. Synergies with other rural development programmes which can be exploited and maximized demand increasing levels of investment.

With this background, the consultation appealed to Asia-Pacific Heads of State (and to ministers of agriculture, rural development, planning and finance) to alert and motivate their countries' political will and investment commitment to form policies and take initiatives in due proportion to urgency of sustainable natural resource management, to create an enabling environment for advances in agriculture and rural development. The Consultation called upon Heads of State and Ministers to forge and enable public and private sector cooperation in investment and peoples' participation in planning and implementation. Such cooperation would focus on watershed and river basin development; integrated land, water and irrigation management; infrastructural and institutional strengthening and market reforms, human resource development (for generating, adapting and transferring technologies and equity- and gender-sensitive approaches to increasing and diversifying national and regional agricultural economies) to inaugurate a sustainable Asia-Pacific Ever-Green Revolution.

Economic policies: Arising from this political will and commitment to investment, suitable economic policies must be framed and an enabling environment created to ensure a fair return to cultivators, which in turn encourages their investment in land and water. Such policies may provide more

incentives to the private sector, credit-linked beneficiary investment schemes, direct release of funds to watershed development implementing agencies, decentralization and the devolution of power. They should also include finance management, operational transparency, collective decision-making, targeted and structured subsidies, community-managed revolving funds, viable water use associations, cost sharing and community level support for higher quality first stage agricultural processing activities, land rights and entitlements. The need for congruence and coherence among concerned sectoral policies was emphasized.

Priority land and water sector programmes included: conservation tillage, watershed development, small irrigation systems, groundwater development, improved lower level canal irrigation efficiency, conjunctive use of surface and groundwater, promotion of land consolidation against fragmentation and institutional capacity building. The Consultation recognized that improved irrigation system efficiency, faster groundwater exploitation through aquifer management and land and water management in difficult agro-economic regimes requires greater involvement of farmers and community organizations. The Consultation noted that in many countries such "small projects" are already priorities and need more support, through organizational and financial reforms, for faster replication.

The Consultation observed that irrigation project development costs have risen significantly in the recent past and therefore the benefit in terms of area coverage is not increasing in proportion to investment. It recommended that high priority may be assigned to complete the pending projects at the earliest to avoid cost overruns and time overruns and to derive the benefits in a cost effective way. The magnitude of this situation as occurring in India and other countries needs to be redressed by enhanced investment.

Comprehensive country specific reform packages are needed to improve irrigation system performance. Irrigation Management Transfer (IMT) programmes often have budgets too small for institutional development, training and capacity building. This may constitute a threat to the sustainability of water user associations after IMT implementation and must be reflected in IMT instruments.

Small-scale irrigation schemes can bestow efficient flexible distribution and management regimes. Their limitations include no outside urgency to bear risk, lack of financial or borrowing capacity, uneconomic irrigation design and management. In such schemes much higher investment by the beneficiaries may be promoted.

Over-extraction of groundwater is widespread and caused by industrial, domestic and agricultural withdrawals. In substantial areas of China and India, groundwater levels are falling by 1-3 metres per year. Over-extraction in coastal areas causes ingress of saltwater into freshwater aquifers. The Consultation recommended that investment in groundwater utilization must be based on water balance and recharge data of the area and the spatial distribution of wells and pumps regulated accordingly.

The Consultation recognized the FAO Agro-ecological Zoning Methodology (AZM) as providing a broad framework for developing perspective national land use policy. Irrigation and water requirements must be systematically and scientifically assessed in the context of cultivable land availability, food and agricultural production goals and demand-supply balance. "Global" and "local" models for assessing these needs and prospects are available and can be further developed, which countries must be aware of and capable of using in their development planning exercise.

Land and water use planning and management: The consultation noted that more attention is needed to improve planning of land use and land management. Natural resources inventorying, efficient crop

zoning, land reclamation and soil fertility improvement, arresting the impact of land degradation processes involving integration across disciplines, ministries, farmer groups and NGOs is required to meet farmer-driven technology support for a diversified agricultural economy and sustained faster and more broad based rural development. Countries were urged to evolve a perspective national land use and water policy fully internalized in national agricultural policy with emphasis on conservation of fragile lands, restoration of problem lands and intensified production of good lands. Adequate investment must be mobilized for enabling community owned watershed development programmes and for environment-friendly integrated plant nutrient management programmes.

The Consultation noted that besides serious gaps in land and water management and priorities, there are serious conflicts between quick gains and long-term sustainability. Several successful experiences of land and water management with tremendous impacts on production, productivity, food security, poverty alleviation, income, trade, and sustainability exist in Asian and other countries. The Consultation recommended that FAO should critically document and share these experiences with Member countries. There are cases of failures as well, which should also be critically analyzed and the causes behind made known to avoid further failures.

The Consultation appreciated that many times local wisdom, indigenous knowledge and technologies have been highly effective in land and water management. But in the rush for quick fixes and due to the lack of vision and *perspectives*, these traditions and wisdom are dying. The Consultation recommended that management of investment in land and water must duly recognize the traditional knowledge, and blend them with modern technologies referred to as ecotechnology. The need for investing in people in shaping their attitude and participation can hardly be overemphasized. The people are the real guardians as service providers as well as beneficiaries, and hence the development must be rooted in the spirit of "of the people, by the people and for the people."

System-based research and technology development: Given the complexity of judicious development and use of land and water resources, the Consultation emphasized that not only agro-physical and agro-biological issues but also socio-economic, environmental and ecological issues should be considered in a system approach to ensure the congruence of enhanced productivity (efficiency), sustainability, profitability and equity. Only such an integrated holistic and system-based research and technology development approach will simultaneously satisfy the varied stakeholders, such as farmers, environmentalists (the "Green" lobby) and the wider public. Paradigm shifts are called for in research and development (R&D) to emphasize an interdisciplinary and multidisciplinary approach rather than monodisciplinary. Moreover, the process and not only the product, system-based and not just commodity-based, and people-and-environment-driven and not just technology-driven need to be emphasized. The Consultation recognized that such R&D systems are bound to be complex and demanding. Therefore, it is recommended that besides increasing R&D investments to meet the complex challenges, institutional supports and human resources should be adjusted for establishing and managing various linkages at national and international levels. For ensuring informed investment and management of the resources, suitable indicators should be developed by NARS, IARCs and FAO for ascertaining economic, environmental, ecological and social costs and benefits. Consequently, policy research capacity, including socio-economic research capacity, will have to be greatly strengthened in national and international land and water R&D programmes.

The Consultation suggested that research and technology development efforts in land and water sectors, backed up by adequate investment, should cover:

- mapping and use classification of land and water resources to improve the efficiency of land and water use in agriculture;
- policy, institutional, economic and social aspects of land and water management;
- design and operation of irrigation schemes;
- management of watersheds for multiple functions;

- management of aquatic ecosystems in particular those with boundaries with terrestrial ecosystem;
- wastewater recycling, conjunctive water use, improved water quality and reduced water pollution;
- restoration of fertility and structure of degraded lands and prevention of further degradation, bioremediation; and
- integrated soil-water-plant-nutrient management and fertility improvement.

In recent years, national and international agricultural research institutions (particularly CGIAR, the Consultative Group on International Agricultural Research based at the World Bank) have allocated increased proportions of their budgets to natural resources management. But, often it has happened at the cost of other equally important areas. Thus, there is a need for explicitly allocating additional funds to land and water resources commensurate with the priority. Their work programmes should clearly identify multidisciplinary and multi-institutional activities. Concerned institutions must have capacity to value natural resources and analyze environmental impacts – costs and benefits to justify as well as to monitor the efficacy of the investments. Because of multidisciplinary and multi-component technology packages and the emphasis on bottom-up and participatory approaches, the Consultation recommended that the extension and technology assessment and diffusion systems should be overhauled and suitably trained human resources should be developed to establish effective research-extension-farmer-market linkages. The Consultation recognized that the Asia-Pacific Region is the leader in development and widespread adoption of Integrated Pest Management (IPM) technologies, including the farmers' field school (FFS) initiative and recommended that FAO and NARS should use this experience in the investment and management of land and water resources. Indicators and methodologies such as those developed by the International Water Management Institute should be internalized in national natural resource management research (NRMR) programmes.

Database and information sharing: The Consultation noted that adequate, timely and reliable data on the state of land and water quality, degradation or improvement are generally not available. It observed that indigenous technologies and knowledge should form an integral part of databases. Public and private sectors should invest not only in necessary hardware and software but also in human resource training and development for collecting, collating and sharing information on land and water resources, recommended the Consultation. Soil and water clinics in rural areas should be linked with rural agricultural information centres which must constitute an integral part of the national agricultural information system. International organizations such as FAO, UNEP, CGIAR Centres – including IWMI and global and national Soil and Terrain Digital Database (SOTER) programmes – have established dynamic and comprehensive databases. National and international databases should be linked with these databases for deriving maximum mutual benefits. FAO should strive to harmonize various indicators, methodologies for environmental and ecological accounting and data collection formats for standardizing the information collection and interpretation procedures.

Integrated approach to investment in and development of land and water: The Consultation underlined that although two distinct and two most fundamental natural resources, not only for agriculture but for the very life and existence of the humankind, land and water are intimately interrelated resources. The extent, quality and productivity of the two resources are highly interdependent. Therefore, the Consultation emphasized that while there must be land-specific and water-specific conservation, development and utilization policies, strategies and programmes, there is a need to have clear policy and approach for synergistic development and effective integration of land and water to enhance overall productivity, sustainability, profitability and reduction of environmental costs. The Consultation recommended that, on the demand side, land and water policies must be reformed to promote land and water savings through demand management and application of appropriate technologies. Policy instruments for demand management may include: (i) enabling conditions through provisions of suitable land and water rights and laws to promote investment in and effective management of the resources, (ii) market-based incentives to promote conservation of land and water resources such as organic farming, appropriate pricing, reduced subsidies on urban water consumption and targeted taxes and subsidies, (iii) non-market instruments, including restrictions, licenses and pollution controls and (iv) direct interventions, including conservation programmes.

Rights to land and water: Secure rights to land and water and rights of access to these resources are essential for long-term investment by farmers in land and water conservation and improvement, as well as to enable the farmers to effectively participate in participatory planning, investment and management. The Consultation expressed concern that such rights have not been granted in several countries to the actual users and developers of the resources, and recommended that this gap should soon be rectified. Property rights for women farmers should be given due attention as the number of women-headed households are increasing. Local customs, needs and specifics should be kept in mind while strengthening the rights regime, which must have efficient conflict-resolving investment-friendly mechanisms.

Financing mechanisms: The Consultation noted that government services to farmers are being reshaped by decentralization of government services, with some reduction in quality of services. Governments are also involved in privatizing many services. These trends, along with the WTO settings are creating changed circumstances in which small farmers have to produce agricultural products and generate family incomes. The Consultation recommended that the impact of these changes on farmers and rural communities and future priorities for investment in the rural and agricultural sector should be analyzed. Besides identifying the priority areas for investment, it would be essential to analyze the various financing mechanisms and their linkages. These linkages must be managed in consistence with the appropriate rights and laws related to the resources and their transparent governance. *What is needed are new financing mechanisms, not criticizing the existing ones.*

The Consultation felt the need of a flexible, responsive and multi-directional financing mechanism. Country-owned poverty reduction strategies (CPRS) can be articulated to provide the basis for donor concessional assistance (particularly World Bank and IMF lending) and use of resources freed by debt relief enhanced under the highly indebted poor countries (HIPC) initiative. It suggested that the World Bank's Comprehensive Development Framework (CDF) or its equivalent the UN Development Assistance Framework (UNDAF) at the country level may form a basis for coordination around programmes and action plans based on the countries Poverty Reduction Strategy Paper (PRSP). The Consultation noted that of the 23 LIFDCs with the highest prevalence of undernourishment, 17 are in the HIPC group of eligible countries. Overall, 41 countries with US$170 billion in external debt are eligible for consideration under HIPC initiative. The enhanced initiative seeks to establish stronger link between debt relief and sustainable poverty reduction programmes in recipient countries.

With the above backdrop, the Consultation suggested that a 'flexible lending framework' should be evolved as a mechanism for implementing CPRS. In this mechanism, World Bank may take the lead in providing broad-based poverty reduction support credit (PRSC) linked to key objectives, reform areas and priority action areas such as land and water development. Governments will receive the credit on IDA terms geared to performance. The funding is integrated with the government budgetary cycle and augments the capacity to allocate resources on a cross-sectoral basis. In this process and facilitation, FAO has a role in assisting governments in articulating agriculture sector strategy and in the formulation of programmes within CPRS framework. This also provides scope for interested bilateral donors to enter into partnership with FAO to support such programmes.

The Consultation further suggested that while each country may evolve clearly defined rights to land, rights to water, and necessary laws, comprehensive and transparent agrarian reforms should be undertaken. The fundamental need for transparent governance of the natural and monetary resources and implementation of the rights and laws can hardly be over-emphasized in the context of flow of funds, especially from external sources. Specific policies for promotion of public and private sectors' investment, loans, credit and subsidy ('smart' subsidy) with special consideration of need and prospect of small farmers, and the provision of necessary institutional and infrastructural support need to be put in place simultaneously. In their negotiations under the WTO Agreement, developing countries must structure the 'green box' or if necessary introduce a 'food security box' in the Agreement, to protect the interest of small farmers and resource-poor .

National vision on investment in land and water: Recognizing the fundamental role of land and water in the very livelihood of people and the state of these resources in the context of sustainable food and environmental security, the Consultation advocated that each nation must develop and adopt a vision on investment in land and water. Each country already has a national water vision. Investment is a mean to achieve a vision. This should be based on the present and future needs of food and agricultural production and productivity and the national and global opportunities. Each nation must assess the extent of cultivated land and irrigation it should have to meet its goals. The extent, status and potential of the resources must be mapped systematically and scientifically, matched with popular aspirations, national capacity and development objectives. One cannot match resources with objectives, This is magic. Instead, one should do the contrary. Based on this, will emerge explicit targets and policies and sectoral and subsectoral priorities for investment in land and water resources.

Bangkok Declaration

The Asia-Pacific Regional Consultation on Investment in Land and Water comprising experts from 12 Asian countries:

Concerned for declining quality and per capita availability of agricultural land and water, for high and increasing human-population pressure – with two-thirds of the world's poor and hungry concentrated in the Asia-Pacific Region, and alarmed by slow progress in achieving the 1996 World Food Summit target of halving by the year 2015 the global total of undernourished adults and children;

Conscious that for land and water – the core, but finite, base for agriculture – conservation, improvement, and judicious use and management are fundamental to sustainable livelihood systems, and that the productivity, profitability, income and employment opportunities and sustainability of Asia's diverse farming systems must be enhanced to ensure long-tem food security for each household in every country;

Recognizing the predominance of small and marginal farm holdings and the risks of degradation of land and water resources through soil erosion, soil-fertility depletion, salt intrusion, waterlogging, flooding, water-table lowering, and water-quality deterioration, and emphasizing the importance of ecotechnology and skilled management for preventing and controlling such degradation processes;

Noting the serious decline since 1990 in national budgets and in donor funding to agriculture in general and to land and water sectors in particular, and mindful of much inefficient and non-transparent governance and of inadequate rights and laws for resource entitlement and utilization;

Stresses the importance and timely opportunity for the **World Food Summit:** ***five years later*** *(*WFS*: fyl)* to re-energize political commitments and investments to arrest and reverse the declines in natural resources and their funding supports, and to accelerate thereby an agriculture-led alleviation of rural and urban hunger and poverty;

Appeals to the Asia-Pacific Heads of State – and to Ministers of Agriculture, Rural Development, Planning and Finance – to galvanize the political will and investment commitment to form policies and take initiatives (in due proportion to the extreme urgency of sustainable natural-resource management) so as to create an enabling environment for advances in agriculture and rural development; and

Calls upon the Heads and Ministers to forge and enable public and private sector cooperation in investment and in peoples' participation for: planning and implementation of watershed and river-basin development, for integrated land, water, and irrigation management, for infrastructural and institutional strengthening and market reforms, for human-resource development – particularly for the generation, adaptation and transfer of pertinent technologies, and for an equity- and gender-sensitive approach to intensifying and diversifying national and regional agricultural economies – thereby inaugurating a sustainable Asia-Pacific Ever-Green Revolution.

Bangkok, 5 October 2001