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UNN-115

Forests in Development - the World Bank Role

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Introduction

This presentation is about the World Bank and investment in forestry. The first part describes the World Bank and the evolution of its lending program for agricultural and rural development - including forestry - until it is now the largest single source of external financing for this purpose. Last year 40% of all Bank lending, some $3.2 billion, was for agriculture and rural development. In the past five years the Bank has invested $10 billion in rural projects valued at more than $24 billion, or a total investment somewhere in the neighborhood of 20 to 25% of all public-sector investment in agriculture in the developing countries. The second part touches on the differences in approach to forest development and utilization in developed and developing countries. The third part gives a description of some Bank investments to indicate the range and scope of our approach to forest development and describes the change in Bank policy on forestry to meet the changing needs of developing countries.

The World Bank Group

The World Bank Group consists of three entities. The first is the World Bank, formally known as the International Bank for Reconstruction and Development, founded in 1945. The Bank is an intergovernmental agency which is owned by its 132 members; its management is accountable to a permanent Board of Directors who pass judgement on all investments and whose votes are weighted in line with the capital subscribed by the governments they represent. (Canada controls 3.8% of the vote). The Bank raises the funds it lends on world financial markets primarily by selling its bonds; it finances its administration out of profits. The Bank lends to member governments for financially viable projects that facilitate development for a 15-20 year term, with a grace period of 3-5 years at an interest rate of around 7.5%. The Bank has never had a default; last year it loaned $6 billion for 137 operations.

The International Development Association (IDA) is the second element of the Bank Group. IDA was established in 1960 to help the poorest countries in the world, many of whom were having problems servicing their debts, because of high interest rates and falling commodity prices. IDA is financed by grants from its richer member countries. IDA is in a position to lend on very soft terms. IDA makes credits on a 50 year basis with a ten year grace period and a three-quarter percent service charge. The last tranche of IDA - IDA V - was for $4.5 billion over three years; the present tranche is for $7.5 billion for the period of 1978 to 1981 or $2.5 billion a year. (Canada contributed $62 million to IDA). Last year IDA made credits of $2.1 billion for a total of 99 projects, with nearly all the funds going to South Asia and Subsaharan Africa. I should stress that all projects financed by IDA must meet the same stringent standards of economic and financial viability as do those financed by the Bank.

The third member of the World Bank Group is the International Finance Corporation (IFC). The IFC provides equity capital and participates in joint ventures in developing countries. The IFC works with the private sector and loaned $228 million in the last fiscal year.

The evolution of the Bank's program for agricultural and rural development mirrors much of the thinking about economic development over the past 30 years. Initially the Bank did not lend for agricultural development or forestry. This was in keeping with the view of most economists at that time that lack of demand was the factor constraining agricultural development. With plenty of land and labor increasing agricultural production was no problem, what was needed was investment in the non-agricultural sector which would generate the demand which in turn would induce increased output.

After more than a decade of operation the Bank made its first investments for agriculture in developing countries; these were primarily for irrigation - a relatively easy means of transferring technology and capital. However, in the early 1960s economists began to emphasize the importance of agricultural development as an essential part of the process of balanced economic development, and began to stress the importance of raising rates of investment in agriculture as a means of increasing supplies. At the same time international agricultural scientists working in Mexico and the Phillipines developed new high yielding varieties of wheat and rice seeds; these provided a vehicle for increasing yields and productivity when they were combined with fertilizer and controlled water supplies, so helping to convince the sceptics that modest on-farm investments could help increase production of these food grains. Bank lending for agriculture expanded rapidly with the Bank lending heavily for infrastructure and on-farm improvement. The proportion of lending for agriculture also rose sharply.

The next phase in the evolution of Bank lending followed several publicly supported analyses of the impact of aid on economic development. The first analysis was undertaken at the Bank's behest by the Pearson Commission; it was supported by subsequent studies by the Bank's staff, and by the staff of the United Nations, trying to measure the impact of the U.N.'s first development decade - the 1960s. These studies indicated that there had been economic growth - per capita gross national product had risen significantly in most countries - but the numbers of poor appeared to have increased substantially, especially in the rural areas; clearly very large numbers were not enjoying any of the benefits of economic growth. Consequently it was deemed necessary

to have a strategy of development that would apread these benefits more widely. The strategy that evolved was one whereby investments were oriented directly toward low income groups - the rural poor. As a result in the last five years more than half of the vastly expanded volume of loans for agriculture and rural development have been intended to raise the productivity of low income groups in the rural areas - mostly small farmers who have been given access to seed, fertilizer, credit, storage and marketing facilities. Many loans have been for irrigation, tubewells and low-lift pumps as well as for small-scale surface irrigation. Some of the loans were also for forestry projects intended to help raise the incomes of low-income groups for many of the people who live in forests are notoriously poor.

Forests in Developing Countries

Forests cover one-third of the world's land area. We are all aware of the economic importance of forests in providing the resource base for a $115 billion global industry. Even more vital than the use of trees as a renewable natural resource, is their ecological role. They are essential to the minantenace of productive watersheds, protecting soils from erosion and preventing excessive flooding or the silting of waterways. This is widely recognised in the developed or industralized countries, which contain roughly half the world's total forest area, and which tend to have policies that manage forest resources for multiple uses. Important scientific advances have been applied to forestry in the areas of pest control, genetic improvement, harvesting techniques and a better understanding of the ecosystem in which forests exist. For these reasons, timber yields on commercial stands have been

increased greatly through modern silvacultural inputs, millions of acres of top soils have been protected and the recreational use of forest areas has increased. Most important, the aggregate harvesting of trees is well below an "allowable cut", meaning that the total forest inventory is increasing.

The situation in the forests contained in the non-industrialised developing countries is fundamentally different. Perhaps this difference is best illustrated by looking at the end use of forests in the developing countries. There, wood resources are consumed primarily as an energy source, providing upwards of 1.5 billion people with the means to keep warm and cook their meals. Eighty-four percent of all wood harvested in developing countries is used this way, generating roughly one quarter of total LDC energy. In the developed countries less than 10% of total wood is used as fuelwood, providing only one percent of total energy. In rural areas of the developing countries fuelwood as a means of energy is often almost total. About 85% of total non-commercial energy, excepting human and animal, comes from wood. Where it is not used, animal dung and crop residues used as energy sources are estimated to be the equivalent of 29% of the energy used in wood burning. Fuelwood is generally collected directly by the consumer, which limits the "drain area" to a walking distance of about 15 Kms. radius from the homestead. Since there are few controls, with little reforestation or forest management, this places great strains on local forest reserves, with scavenging for wood creating virtual desert conditions in parts of West Bengal and Central India. Around Niamey, the capital of the African country of Niger which is located in the Sahel, desert conditions exist for up to 70 Kms around the city largely because of totally destructive 'clearcutting' to provide firewood.

Forests also play a vital role in preserving the environment in the developing countries, and where the land's protective covering of trees has been denuded this has had dire results. Destruction of forests contributed substantially to the desertification in many parts of the Middle East, Central Spain and the Western coast of South America. This same process is now at work in the Sahel. The recent flooding in South Asia, estimated to have taken a thousand lives, is partly the result of deforestation. Even more alarming than these specific illustrations of what happens when forests are misused, is the fact that overall, the tropical forests are being consumed much more quickly than they are regenerating. The Food and Agriculture Organization of the United Nations (FAO) has estimated that roughly 6,000 miles of forest (an area equivalent to one-third of the State of Nova Scotia) are destroyed each year. We estimated in the course of preparing the Bank's Forestry Sector Policy Paper that at the present rate of encroachment and desctruction, the tropical forests of the developing world could, in theory, disappear within about 60 years, unless steps are taken to protect remaining resources, increase the efficiency of existing consumption and initiate reforestation programs on a massive scale.

It is against this background of a deteriorating ecology as well as the spread of rural poverty that the World Bank has been evolving a new policy on forestry.

Bank Lending for Forestry

Bank lending for forestry has changed in line with the evolution of lending for the rural sector. In the earlier years the bulk of Bank lending for forestry was for growth per se and was primarily for industrial forestry projects with four pulp and paper projects accounting for 85% of total Bank lending in this sector. However in line with the change in emphasis, and recognising the urgency for arresting further declines in soil productivity, improving water control and general environmental conditions, the Bank expanded its lending program; the focus shifting to helping the small wood producer who is dependent on wood for fuel and income in the context of rural development.

To explain how the Bank's strategy in forestry development works in practice, I would like to outline some of the new projects which we have designed and financed in conjunction with member governments. My first example is that of Turkey. A country with a temperate climate and relatively far along the path of economic development, Turkey's forest sector faces serious challenges. The Bank initiated a comprehensive review of land use policies in 1973, discovering that the cultivation pattern of total arable lands should be changed to increase output, and that about 4 million hectares of land should be retained under forest area. After productive discussions with the government on overall land use and domestic economic policies (which we call the Bank's "economic dialogue" with borrowing countries), Turkey instituted important changes. As part of the effort, the Bank supported a seven year integrated forestry development project in Northern Turkey, commiting $86 million out of a total cost of $915 million. The project will cover some 100,000 sq Kms, an area including about 9,000 forest

villages with a population of five million, most of whom have extremely low incomes. The project's major emphasis will be on increasing the road network with the construction of 26,000 Kms of roads in the next seven years to enable more intensive utilization of natural forests. The project will create 165,000 new jobs, keep 3,500 small sawmills operating and provide revenues to support a program of forest village improvement which will increase farm output in areas adjacent to forest villages. This latter component, based on an initiative taken by the Government's Ministry of Forestry, is a deliberate attempt through project design to encourage closer integration between forestry and agriculture and to provide small farmers living in the forest villages with improved local fodder supplies as an alternative to continued overgrazing of forest lands.

Another interesting project is the second loan we have made to assist smallholder tree farming in the Philippines. Six years ago, we made the first loan of $.2 million on an experimental basis to see if it was possible to provide credit and technical services to small farmers engaged in wood production. The success of this program, similar to land owner assistance programs in the southeastern U.S.A. which are financed by private forest product companies exceeded our expectations. It led to a second credit of $8 million which finances half the total cost of involving some 7,000 smallholders and 28,000 ha of land which will produce fuelwood, charcoal, leafmeal (for cattle feed), and wood chips for particle board production - also an 8,000 ha plantation of fast growing pulpwood trees. The return on investment of this project will be in the neighborhood of 25% - which compares nicely to the average rate of return of 9% for North American forest product companies.

The Bank has taken on a somewhat different role in Nepal, where the conditions make environmental forestry imperative. In the past decade a quarter of this country's forests have been destroyed. If present trends continue, the Himalayan ranges in Nepal will be totally denuded within 25 years. Over half the total soil erosion in this huge watershed is man-made and the rate of erosion is sureto increase unless corrective action is taken. River beds flowing from catchment areas are rising at the extraordinary rate of 15-30 cm a year. The impact of chronic flooding problems in eastern India and Bangladesh is immense, affecting hundreds of millions of small farmers and landless laborers.

The forests which have been consumed for fuel provide 87% of Nepal's energy. The only alternative energy source at present is animal fodder and dung. When dung and other wastes are not recycled into the soil to increase nutrient levels, food production suffers seriously. If current trends continue, then by 1995 dung and residue energy use could result in the loss of 1 million tons of grain production annually in Nepal - a quarter of total production. On a global basis, this diversion of animal dung to burning has been estimated to result in the loss of 20 million tons of grain production - enough to feed 100 million people. The Bank, along with other international agencies, has helped the Nepalese government understand the nature of the problem it faces. Targets have been established for future afforestation programs needed to support fuelwood production and the Bank is currently assisting in formulation of a project which will initiate a large reforestation program in the Hill Districts to be closely associated with ongoing rural development projects.

Another project under preparation which will help meet the ecological requirements in this region is located in Bangladesh. It is proposed to plant mangroves along the southern coastal fringe of the Bay of Bengal to protect the rural population and agricultural crops from the disastrous effects of periodic flooding, cyclones and tidal bores.

In India, a recently appraised project aims, through a combination of improved range and crop management and animal husbandry, soil conservation, and reforestation works, to rehabilitate one of the main water catchment basins of the Western Himalayas. This will be the first phase of a major catchment protection program designed in the longer term to reduce the risk of catastrophic floods such as those which occurred earlier this year.

The crisis faced by the Sahelian countries has received great attention. The causes of the crisis are, perhaps, not as well known, but it seems certain that the destruction of the forests of the Central Highlands of Ethiopia and savannah woodlands of the countries in the Sahel Zone through over-grazing have been major contributing factors leading to increased desertification in this part of West Africa. The Bank has already taken steps, along with other donor agencies, to reverse the ecological degradation in this region. A credit to Niger to assist it to develop its diminished forest resources while protecting its environment was made this year and more are in the pipeline for Mali, Upper Volta and other Sahelian zone countries. As part of a credit to Chad, fragile savannah woodlands will be better managed and protected through rotational grazing schemes and construction of tree nurseries. As is true with many African nations, the most important component of the Bank's work in the Sahel is institution building. The first step towards creating the framework

and know-how to use good forest management to help solve the Sahel's ecological problems has been made. This will allow future aid flows to be used effectively.

The Bank has also continued its work in support of ecologically sound logging industries that meet growing world demand for tropical hardwoods. This is an important element in the economic wellbeing of many forest surplus countries of the developing world. The Bank is assisting these countries in managing their resources for maximum gain, introducing harvesting patterns that ensure a sustained yield from the tropical forests. The Bank has also rendered assistance to governments of countries where the utilization of forest resources is largely in the hands of foreign contractors and multi-national companies. For example, the Bank is helping the West African forest surplus countries to develop timber allocation policies which will result in their realizing greater returns from existing commercial forestry activities - a sector which presently accounts for up to 50% of total export earnings in some instances. In Guyana, a country with a huge under-utilized resource base of natural tropical hardwood that will rot if it is not harvested, the Bank has recently financed construction of a major $30 million forest industries complex with special emphasis on trying to broaden the range of tropical hardwood species to be marketed in the U.S.A. Europe and elsewhere.

In additon to the expanding market for logs and other wood products, there remains an important potential for increased pulp production. The difficulties in harvesting natural tropical rain forests, given the incredible variety in natural vegetation, are great, but Brazil, Chile and other countries have demonstrated that it is possible to develop privately financed fast growing pulpwood plantations, pulp, paper and lumber industries. The IFC has assisted

in the equity capitalization of new private companies taking advantage of commercial opportunities with developing country forests. It has provided the technical know-how needed to ensure that these ventures prove profitable to entrepreneurs and the countries where they operate. In the past 10 years IFC has made some 26 investments in pulp, paper and wood products ventures, and committed approximately $150 million for projects with a total cost of $680 million. Several investments were small and made in pilot projects. Others were in plywood, sawn lumber, fiberboard, box board, etc. The bulk of the ventures were in pulp and paper which had combined planned capacity totalling almost a million MT a year of new output (equal to 30% of total developing world production in 1975).

Constraints to Forestry Lending

Naturally, the rapid escalation of Bank forestry lending activity which we are now undertaking has brought the Bank face-to-face with a number of constraints to expanding lending for forestry. There are many, but I will mention only one main issue here, namely an increasing realization within the Bank that forestry development cannot be viewed in isolation. The needs of rural people, particularly those living in remote areas, include roads, water supplies, health clinics, schools, improved seed, fertilizers, access to credit and agricultural extension services and, frequently, such developments will appear to them as matters of higher priority than longer term afforestation or soil conservation programs. In short, rural forestry programs will be most likely to succeed in areas where an integrated approach is being taken to rural development, where needed goods and services are being supplied and where forestry is included as part of an overall development package.

Appreciation of this fact has affected Bank forestry project work in three main ways. First, as an integral part of forestry project preparation and appraisal activity, we have found it increasingly necessary to include sociological studies at the village level to ascertain the people's own priorities for development and to examine ways and means of motivating their interest in rural afforestation schemes. Secondly, it has affected forestry project design. The range of components in Bank financed forestry projects has been expanded to include components which will give small farmers a viable alternative to continued over-grazing and destruction of forestry resources. These include, for example, financing of agricultural inputs, credit and extension services for increasing production of on-farm fodder supplies so providing an alternative source of income to those derived from destroying forests; in addition the introduction of innovative wood-saving technology such as more efficient wood-burning stoves and alternative rural energy systems such as biogas, solar energy, small scale hydro-electric or wind-powered generators, can help lead to significant savings in wood usage and so ease the pressure for development of new forestry resources. Thirdly it has affected the organization of forestry activities within the Bank by pointing up the need for closer integration of work between the Bank's forestry specialists and those experts working on other aspects of rural development.

An indication of how these conclusions have influenced Bank forestry lending can be gained by reference to the fact that in addition to 16 "forestry" projects so far financed by the Bank, we have also, during the last three years, included significant forestry components in some 20 agriculture or rural development projects.

Looking Ahead

The growth potential of the tropical forests may sound incredible to North American foresters: 20 to 30 cubic meters of wood growth per annum compared with an average of 3-5 cubic meters in interior Canada and 5-8 meters in the Pacific Northwest coastal areas. The growing cycle for a hardwood pulp tree is six years, for a Caribbean pine, it is 12 years. Consequently, I believe the developing world has great potential as a source of industrial forest products. Despite the obvious technical problems - similar to those raised by 1920s experts, who said that a pulp and paper industry would never develop in the Southern U.S.A. (which is today the center of U.S. production and the world's lowest cost producer for many types of paper products) - we can expect further growth in this sector which will benefit the world economy, those developing countries and the poor, under-employed inhabitants of forestry areas.

Looking ahead, we are aiming to increase World Bank lending to forestry five-fold over the next five year period and to reach a total of half a billion dollars by 1983. Most of the money will be spent as part of broad based rural agricultural development projects containing money for other sectors. The Bank plans to help in further development of integrated and sustainable forestry programs in some 40-50 developing countries by 1983. Priority will be given to:

Environmental forestry - with protection of forests located in watersheds, sand dune stabilization in arid areas; forest inventories for future utilization; and land use and soil surveys as a prerequisite for balanced agricultural settlement in tropical regions.

Rural development forestry - establishment of village woodlots containing species suitable for fuelwood; fruit fodder fibre; poles and timber production; and creating new employment opportunities in smallscale wood using industries in rural areas.

Institution building - training; education; research on tropical forestry (which is decades behind similar efforts on the temperate coniferous forests of the industrialized countries); and extension services that enable new techniques to be effectively applied in the field.

Industrial forest projects - continuing support for industrial forestry and export programs in the developing world including joint efforts with the private sector, provided such efforts are consistent with economic and social priorities of developing countries.

The examples I have cited earlier should give some indication of the work we are engaged in at the World Bank. The development of the tropical forests of the world is a vitally important concern, one which affects the wellbeing of at least one billion people. The major use of these forests is at present for fuel, a necessity, given endemic poverty and the limited supply of alternatives which do not cut into food production, and the Bank will give high priority to reforestation programs using fuelwood species. At the same time the Bank will continue its work in environmental forestry, through capital investments, technical assistance, research, institution building and innovative pilot projects. We will also stand ready to participate when the private sector

is willing to take on the major responsibility for using forest resources productively in developing regions. The Bank's role is important, but not central. The countries themselves must attack the crisis in their rural areas before they become socially and environmentally unmanageable. We can assist forestry officials and others who recognise the importance of this sector, but in the final analysis the responsibility lies with the countries themselves.

November 13, 1978