



منظمة الأغذية  
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للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
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Organisation  
des  
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pour  
l'alimentation  
et  
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Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## TWENTY-SEVENTH FAO REGIONAL CONFERENCE FOR LATIN AMERICA AND THE CARIBBEAN

Havana, Cuba, 22 to 26 April 2002

### BALANCE BETWEEN FOOD SECURITY AND THE SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES IN LATIN AMERICA AND THE CARIBBEAN

#### I. Introduction

1. While agriculture has played a central role in the development of Latin America and the Caribbean, it still possesses considerable potential for providing the population with food and fostering economic growth. The Region's natural heritage is one of the richest in the world, with extensive biodiversity, the most land area per inhabitant and the largest reserves of freshwater on the planet. While the countries of Latin America and the Caribbean account for 8% of the world's population, they have 25% of its potential arable land, over 40% of its tropical forests, 23% of total livestock and some 30% of freshwater reserves<sup>1</sup>. Under sustainable management, these resources would be sufficient not only to produce enough food for all the population but also to generate foreign currency and resources for the development of other economic sectors, as well as providing a range of environmental, cultural, social and scientific benefits.

2. This availability of natural resources also needs to be seen the light of the progress made in most of the countries of the Region in the 1990s through the implementation of economic reform. This has mainly taken the form of policies of stabilization, modernization of the public sector, withdrawal of State intervention in production and trade, reform of the financial sector and liberalization of international trade. These changes occurred alongside major changes in the international trade of agricultural and livestock commodities, which led to increased demand for traditional and non-traditional agricultural commodities for which the countries of Latin America and the Caribbean have high potential. The negotiations to be conducted from mid-2001 under the World Trade Organization (WTO) also hold out prospects of greater liberalization and higher volumes of trade.

<sup>1</sup> FAO/RLC (1999), FAO/RLC (2000a), FAO/RLC (2000b)

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3. While the above indicates a positive scenario for the expansion of agriculture, the Region nevertheless faces significant problems and challenges. Despite an abundance of resources and the progress made in economic reform, poverty and food insecurity continue to affect a high proportion of the population of Latin America and the Caribbean.

4. It is vitally important to tap the natural resource potential using sustainable management methods to resolve the problems associated with food security. Most of the rural poor are small farmers - approximately two-thirds of the total, or 52 million people - living in fragile ecosystems, with insufficient land and insecure forms of tenure. From the perspective of agricultural production, this has resulted in recourse to production systems and techniques that facilitate processes of degradation, which have in turn caused a continuous deterioration in physical, chemical and biological properties, and production capacity. It is estimated that some 20 % Latin America is under some form of desertification, and that half the time this process is moderate to severe, while 50% of the total area is under high risk of desertification.

5. The problems of poverty and food security require actions on a variety of levels. FAO has been implementing numerous initiatives in the Region, targeting food security and sustainable use of natural resources. These initiatives include projects and international networks focusing on specific problems. The projects cover an array of thematic areas, including support for the generation of non-farm rural employment, access of small farmers to productive resources (land, credit and technical assistance), sustainable development of forestry, diversification of crops, generation and dissemination of new production technologies, and the formulation and implementation of policies.

6. In view of this wealth and range of experience, the Regional Office for Latin America and the Caribbean decided to devote one of the documents for the 27<sup>th</sup> Regional Conference to the lessons that have been learnt from the recent implementation of programmes and projects, so as to identify central priorities for its work with countries regarding food security and sustainable management of natural resources.

## **II. The recent evolution of Latin American agriculture: opportunities and challenges**

7. The evolution of Latin American agriculture in the 1990s was influenced by the implementation of economic and sectoral reform that impacted heavily on production and on institutions associated with agricultural and rural development. In most countries, the Ministries of Agriculture and other agricultural and rural development institutions played a relatively small role in determining sectoral policies. These policies were subordinated to broader policies of stabilization and structural adjustment that prioritized the control of public expenditure, reform of the financial sector and reform of the public sector, with the privatization of public corporations, a reduced direct role on their part in production and trade, and administrative decentralization. In addition, trade policies were largely conditioned by terms of entry to the World Trade Organization and by agreements on trade integration<sup>2</sup>. The Ministries of Finance and the Economy and the respective central banks played the lead role in all of these policies.

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<sup>2</sup> A number of free trade agreements were approved during the 1990s, including the North American Free Trade Agreement, NAFTA (Mexico, United States and Canada) and the Southern Common Market, MERCOSUR (Brazil, Argentina, Uruguay and Paraguay, with Chile and Bolivia as associate members). There was also the vitalization of already existing trade agreements, notably the Andean Community and CARICOM.

8. With regard to agricultural policies, most governments implemented reforms that promoted the liberalization of commodity and input markets, the restructuring of the agricultural planning system, and the reorientation of policies of administration of water resources. The liberalization of markets generally implied the elimination of public entities responsible for the marketing of inputs and commodities, and a drastic reduction in public intervention in price control. Reforms in the administration of water resources required the drafting of new legislation and the establishment of new institutions to define policies and to administer water resources at national and local level, the transfer of public irrigation projects to private associations of water users, and a redefined role of the State in the identification, delivery and administration of irrigation projects. Meanwhile, the reorganization of agricultural planning systems included the elimination of direct intervention on commodity and input markets, and a halt to or drastic reduction in the provision of extension services. The reforms to the traditional agricultural institutions generally entailed a declining role for the ministries of agriculture and spurred the emergence of new players at local level (provincial and municipal governments) as a part of the decentralization process.

9. The present agricultural situation in Latin America, with its strong natural resource potential and the results of policies implemented in the 1990s, is one of major challenges and opportunities, calling in particular for a redefined role of the public sector. The policies implemented in the 1990s had major consequences for agriculture and for natural resource utilization. The policies to reduce public expenditure and the reforms to the agricultural planning system resulted in important institutional vacuums<sup>3</sup>, and in particular a dramatic reduction in investment in productive infrastructure, a decline or elimination of public extension services and a slump in financing of agricultural research.

10. In Latin America and the Caribbean, investment in research and development for agricultural technologies represents an average of approximately 0.5% of the Region's agricultural GDP. This contrasts sharply with agricultural research in the developed countries, where the coefficient is estimated at 2.5%, calling for a rethinking of prevailing trends and the design of new instruments of technology policy for the Region<sup>4</sup>. Moreover, estimates on the relative proportion of private investment in agricultural technology indicate that this represents less than 10% of overall expenditure on research in most of the countries of the Region<sup>5</sup>, with only a few countries exceeding 30%. In the developed countries of the OECD on the other hand, private investment in agricultural technology accounts for an average of 47% of overall expenditure on agricultural research, with some countries such as the United States and the United Kingdom topping 50%.

11. In addition, the institutions that provided rural credit have disappeared in virtually all countries. This, together with restrictions applied to the provision of credit as part of disinflationary policy and the withdrawal of the State in determining interest rates, has led to drastically reduced access to financing for production. These problems have been felt most keenly by the poorest producers, who had traditionally experienced problems of access to credit and public extension services.

12. The opening up of trade, population growth, increased income and changes in consumer preferences have opened up new opportunities on external markets. At the same time this has produced heavy pressure on achieving competitiveness, which has frequently led to the

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<sup>3</sup> FAO (2000d)

<sup>4</sup> FAO (2000a)

<sup>5</sup> FAO (2000a)

elimination of small producers who have been unable to reconvert their traditional production to more profitable products, with obvious negative consequences on their access to food. Although various countries of the Region have sought to establish mechanisms to promote private involvement in agricultural research and technical assistance, progress in this area has generally been slow and access on the part of small farmers to these services has been very modest.

13. As a result of the social consequences of structural reform and macro-economic policy, the levels of rural poverty have remained much the same since the early 1990s. The percentage of poor rural households passed from 58% to 54% between 1990 and 1997, while the destitute population changed from 34% to 31%<sup>6</sup>. However, the number of rural poor remained virtually the same, from 78.5 million in 1990 to 78.2 million in 1997, while the urban poor increased from 121.7 million to 125.8 million during the same period. The situation is exacerbated by heavy inequality in income distribution, with the Gini coefficient in Brazil rising from 0.59 to 0.61 between 1986 and 1996, in Mexico from 0.47 to 0.52 and in Chile from 0.44 to 0.58<sup>7</sup>.

14. Rural and urban poverty exist in many dimensions, the most important in many countries of Latin America and the Caribbean being food insecurity - understood as the lack of access to sufficient food to lead a healthy and active life. While the proportion of undernourished persons in the total population of South America fell from 14% to 10% between 1990-92 and 1996-98, it increased in the Caribbean from 26% to 31% and in Central America from 17% to 20%. The situation is extremely serious in some countries, with the proportion of undernourished in 1996-98 reaching 62% in Haiti, 31% in Nicaragua, 28% in the Dominican Republic, 24% in Guatemala and 23% in Bolivia. In some countries, the situation was further aggravated by natural events such as Hurricane Mitch in late 1998, which affected Honduras and Nicaragua mainly, and the major earthquake that struck El Salvador in January 2001, inflicting heavy damage on infrastructure and crops - events that had serious repercussions on food supply in these countries<sup>8</sup>. But problems of rural and urban poverty affect not only those living in poverty, for they generate other negative phenomena such as violence and the cultivation and marketing of illicit crops.

15. Most countries have implemented mitigatory programmes (generally known as "social investment funds") in urban and rural areas. While these programmes helped channel a sizeable volume of benefits to the poor, they lacked any major catalytic impact as related actions targeted investment in social infrastructure, disregarding productive infrastructure, transfer of technology and financing of production. This suggests the need for strategies addressing poverty and food insecurity that go beyond mitigatory-type policies and projects and that generate processes of economic change that will impact on production, employment and incomes among broad sectors of the population.

### **III. Lessons from the implementation of projects**

16. Recent experience gained in the implementation of projects points to a number of useful lessons for FAO action in countries. Initiatives to promote food security and the sustainable use of natural resources should incorporate the following elements:

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<sup>6</sup> ECLAC (2001)

<sup>7</sup> World Bank (2001)

<sup>8</sup> FAO (2001)

17. a) Projects and other initiatives *require a substantial time frame, greater than the majority of initiatives of governments and international cooperation agencies*. Many actions of FAO and other institutions to address problems of food insecurity, with the sustainable management of natural resources, are based on projects of short duration. This is frequently due to pressure on governments to achieve quick results, coupled with a desire for visible impact within a period of government. However, very often these projects have produced poor results and any success has not proved sustainable. The experience of projects studied indicates that the best results have been obtained with actions of longer duration, which suggests that FAO and governments should commit themselves to longer periods for the implementation of proposed actions.

18. All the successful initiatives that have been studied (Annexes 1 and 2), regardless of their purpose - support to policy formulation, projects targeting specific technological problems or territorial/local projects - were characterized by having a relatively long duration. They involved a variety of modalities, such as a sequence of projects, generally TCPs (of up to two years in duration) whose promising results led to various UTFs (Unilateral Trust Funds) and/or ICPs (intergovernmental cooperation projects) of a longer duration, including rural development projects of four to five years, with provisions for approval of a second phase of variable duration. In the case of policy projects, a minimum period of time is required to formulate proposals and especially to negotiate with the players involved and to get them to agree to proposals. As regards projects focusing on rural poverty, the required duration is governed by the difficulties and normal slowness in changing a situation that is characterized by fragile institutional structures, unsatisfied basic needs and resistance to change.

19. These considerations are very important in that they suggest not only that FAO should implement actions that call for longer-lasting commitments with governments, but that policies, projects and other initiatives implemented at national level should extend beyond the frequent time frames corresponding to periods of election and become *state policies that involve alliances and agreements among different social sectors in the pursuit of objectives such as food security and a general reduction in rural poverty*.

20. b) *Projects can be considered as policy "incubators", signposting successful routes for the shaping of state policies*. Various FAO projects in Latin America and the Caribbean were set up as small-scale pilot operations implementing alternative forms of support to small farmers, where generalized implementation would have been politically or technically unfeasible. Such projects served to demonstrate the effectiveness of new approaches and to generate information and lessons on how to resolve a variety of problems, opening up the possibility of translation into policies for regional or national application (Annexes 2 and 3).

21. c) *There is a need for an active process of generation of production technologies and systems adapted to local ecosystems and to the specific characteristics of small farmers*. The importance of agricultural research and the generation of new technologies for agricultural development is well known. However, policies to reduce public expenditure, added to the perception that there is already a wide availability of technologies in the industrialized countries, have led to a drastic reduction in expenditure on agricultural research in the countries of Latin America and the Caribbean (Annexes 4, 5 and 6).

22. Project experience has shown that agricultural research continues to be a central pillar of any food security strategy compatible with the sustainable management of natural resources. The projects that have been most successful, in promoting production changes for improved food

security and substantially reduced degradation of natural resources, reveal the importance of being able to propose production systems and technologies that are tailored to local conditions, meaning not only characteristics of local ecosystems but also farmer profile (size of plot, form of land tenure, restrictions on access to support services, structure of main production chains). For example, many of the most successful projects were based on proposed production changes that called for adjustment of local agro-silvo-pastoral systems and introduced diversification with alternative crops.

23. The results of these experiences point to the importance of food security policies in the *development of technologies and production systems adapted to local production conditions*. This calls for the active participation of governments and the creation of an appropriate institutional framework for the generation and dissemination of such technologies and production systems.

24. d) *The concept and technologies of "conservation agriculture" can provide concrete and useful solutions in many situations of rural poverty in terms of food production and sustainable use of natural resources*. Many of the successful projects (Annex 5) involved the use of production systems and technologies that promoted the integrated management of soil, water and biological resources, with a limited use of external inputs. With FAO assistance, Latin America and the Caribbean has become the Region in which conservation agriculture has made most progress, with several countries even featuring this in agricultural policy and establishing corresponding specialist departments in their ministries of agriculture. For more than ten years, FAO has also supported the creation and development of the Latin American Conservation Tillage Network, which groups research and extension institutions dedicated to the generation and transfer of technologies in areas such as soil management and water conservation practices. Such progress has resulted in FAO using the Region of Latin America and the Caribbean as a model for the promotion of conservation agriculture in other regions of the world.

25. e) *While technological innovations that result in increased food production are essential, they are not in themselves sufficient to implement a successful food security strategy compatible with sustainable use of natural resources. There is a need for broad and adequate access to land, technical assistance and credit by the most vulnerable farmers*. Food security initiatives based on technological innovations are essential but need to be complemented with other actions to resolve the problems of food security and prevent the degradation of natural resources. *There is also a need to recognize the possibility of "trade-offs" between the objectives of natural resource conservation and increased food production*. Project experience shows that adequate access to land, capital and technical assistance are fundamental requisites of a food security strategy that is compatible with natural resource conservation (Annexes 2 and 5).

26. The correlation between insufficient land availability and overexploitation of natural resources is well known and documented, as is the association between insecure land tenure and failure to apply production systems and techniques that permit resource conservation. This is highly relevant given that many countries of Latin America and the Caribbean continue to be noted for their inequality of land tenure and the poor functioning of their land markets (Annex 5). Improved and more stable forms of land access for the poorest and most vulnerable farmers is therefore essential in any food security strategy that also envisages sustainable natural resource use, requiring the consolidation land titling processes and an improved functioning of land markets.

27. There is also a need for rural financing institutions that will provide small farmers with access to the financial and technical assistance services required for effective transfer of

technology and know-how. This is a pressing and unavoidable challenge for governments and international agencies involved in rural development, given that public rural financing and extension institutions have been eliminated in many countries of the Region, without any replacement by alternatives that function properly.

28. f) *While initiatives to promote greater food production are essential in any food security strategy, there is also a vital need for actions that will address the existing problems of post-harvest food losses.* Such actions will have a favourable impact on the sustainable use of natural resources as post-harvest losses also imply losses of resources used to produce the lost commodities. Various FAO projects in Latin America and the Caribbean have promoted actions to improve grain storage and reduce post-harvest losses. The Organization has also provided support to the Internet-based Information Network on Post-harvest Operations (INPhO) to enhance the exchange of related information between research and development institutions and non-governmental organizations.

29. g) *It is essential to promote community organization to overcome problems of collective action for production, marketing of production and management of public and private institutional support.* Past projects have shown that proposed action that is technologically and productively appropriate will often be insufficient to bring about the intended production changes. Proposed initiatives can prove unviable unless there is a grassroots organization in place to resolve problems affecting the community as a whole. For example, a number of FAO projects are located in mountain slope (Annex 5) ecosystems where poverty induces the depletion of natural resources under common ownership. In such cases, the local communities generally find it difficult to identify ways of conserving these resources while using them for economic returns.

30. Good results have been obtained in such situations by strengthening already existing or recently created producer groups for the promotion of new forms of forest management based on community organization. This requires extensive training, not only in aspects of production, but also in organization, administration and management. All this leads to reduced deterioration and a significant increase in community income. Other incentives for community organization stem from the need for a certain scale of production for the effective sale of products and purchase of inputs, for actions against pests and disease, which need to embrace all the producers in an area, or for relaying key needs of local small farmers to public sector institutions (Annexes 5 and 7).

31. h) *A strategy of food security and sustainable use of natural resources should incorporate both agricultural and non-agricultural activities and employment.* The campaign against food insecurity has focused basically on bringing about changes in agriculture. In recent years, however, increasing attention has been paid in Latin America and the Caribbean to non-farm rural activities, given their considerable contribution to the income and employment of rural households in the Region. Recent studies have shown that off-farm rural employment in Latin America and the Caribbean accounts for approximately half of the total income and one-third of employment of rural families<sup>9</sup>.

32. FAO projects suggest that non-farm rural employment (Annex 8) can represent a vital ingredient of a strategy for food security and natural resource conservation. Employment generation projects for the rural landless have based their success on training and motivation, and on the creation of micro-enterprises dedicated to non-agricultural activities. As agricultural

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<sup>9</sup> FAO (1998)

support solutions to improve the food situation are not possible for a population without land, non-farm activities help create employment and income opportunities that will have a direct impact on capacity to purchase basic foodstuffs and other consumer goods. There is therefore every reason to believe that where a poor population has limited or no access to natural resources, *non-farm employment can serve as the basis of a strategy targeting food security and improved quality of life*. This would also help reduce pressure on the natural resources (Annex 8).

33. i) *There is a need to recognize and absorb the consequences of recent institutional changes in most of the countries of the Region, notably political and administrative decentralization, and to allow for the participation of new players and institutions at local level.*

The institutions that traditionally made up the rural development planning systems were essentially situated at national level and dealt exclusively with agriculture. The lack of involvement of communities and local institutions caused numerous drawbacks, including an inadequate identification of problems and the design of solutions that were not appropriate to existing problems.

34. The experience of FAO projects is coherent with the findings of recent agricultural studies regarding the *need to view the local territory as the central level of operation and/or to incorporate local institutions, including those not directly related to agricultural activity.* For example, implementation of projects that included non-agricultural activities required the involvement of local institutions that had the necessary skills and experience to support training, the formulation of investment proposals and the financing of industrial and commercial micro-enterprises. Other project experiences have meant working jointly with local governments and beneficiary organizations, making it possible to involve the beneficiaries in the design and execution of project activities. Other programmes have revealed how the new context of decentralization - and in some cases the sheer size of the country - require the participation of local governments in their design and execution, thus calling urgently for enhanced capacity in order to achieve effective policy determined by local natural resources (Annex 1 and 3).

35. j) *Actions centring on plant and animal health and food safety are a centrepiece of any strategy for food security and sustainable use of natural resources.* Food markets have seen stricter requirements and controls for products entering countries in order to protect human health and prevent the entry of transboundary pests and diseases that could affect crops and livestock in the importing country. The importance of health and food safety considerations has been highlighted by the damaging consequences of Mad Cow Disease in Europe and Foot-and-Mouth Disease in European and Latin American countries, but this is an issue that embraces a multitude of pests and diseases and also relates to production inputs (Annex 9). All these aspects are enormously important in that they affect production technology and therefore the use of natural resources. In addition, the experience of FAO and recently occurring problems of animal health have demonstrated that isolated country actions are not viable, and that there must be concerted action on the regional level.

36. k) *It is essential to strengthen the capacity of countries to advance agricultural trade negotiations and to comply with international agreements that touch upon food security, sustainable management of natural resources and the strengthening of public services for plant protection and animal health.* The results of trade negotiations impact heavily on the use of natural resources and therefore on food security. Experience in the 1990s in many Latin American countries shows that the opening up of trade had a major impact on agriculture and natural resources, triggering processes of reconversion that led to significant gains in land given over to competitive export crops and a reduction in area under less competitive crops. This has direct implications on the control of phytosanitary quality and/or animal health and therefore on food

quality and safety, a factor often affecting the viability of small farmers and the production of staple grains, fruit and horticultural products and livestock farming. The opening up of trade can therefore affect food availability and applied technologies through changes in land use. FAO has been conducting regional and national projects to train technical staff in trade negotiations, systems of control and necessary management methodologies and tools (Annex 10). Such training needs to consider the implications of negotiations for food security and the sustainable management of natural resources.

#### IV. Recommendations

37. The above considerations lead to the following recommendations for the work of the Regional Office with the countries of Latin America and the Caribbean:

- i) To move from an approach of short-term self-contained projects to one of sequences of projects formulated within the framework of long-term plans of action. At national level, these long-term plans of action should be framed within State agricultural policies that represent agreements with different sectors of society and strategic alliances, and that go beyond the desire to achieve results within one term of government.
- ii) To view projects as "policy incubators", implementing a system that will generate project lessons and establish mechanisms with individual governments for successful lessons to be widely replicated in the formulation of State policies.
- iii) To shift from a policy of single-issue projects to multi-disciplinary projects that prioritize the resolution of local problems and the participation of different local actors in their design and implementation, and that adopt a more holistic approach to the problems of food security and natural resource conservation. This means going beyond agriculture, to include non-farm activities, and beyond solutions that are purely technical, to include consideration of organizational, marketing, rural financial and other aspects.

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## ANNEX 1

### **Food Security Through Support for Development and Implementation of New Policies for Sustainable Use of Forest Resources in Brazil**

#### **Projects TCP/BRA/6712 and UTF/BRA/047/BRA “Support for Forestry Agenda in Brazil”**

This project began in April 1997 as a technical cooperation project (TCP/BRA/6712), and was supplemented by a UTF (UTF/BRA/047/BRA) entitled “Positive Agenda for Brazil’s Forestry Sector.” The two efforts shared common objectives and were implemented jointly by the Ministry of Environment. UTF/BRA/047/BRA was extended several times and is currently ongoing. The projects focused on developing new forestry policies and were the result of major changes in environmental and forestry policy that Brazil adopted at the beginning of the 1990s – changes that involved promoting sustainable use of the country’s forests in general, and of those of the Amazon region in particular, with an emphasis on reducing deforestation caused by the expansion of commercial agricultural areas and/or of small subsistence farming.

The projects were aimed at conducting detailed studies on issues relevant to forestry development. The resulting studies and proposals served as the basis for a new set of policies and instruments for forest resource management in Brazil, based on an approach fostering sustainable use of forest resources. Among other benefits, this will provide many small producers with sustainable means of utilizing the forests, while increasing their income and access to food. In addition, the projects promoted a decentralized approach to addressing problems, giving state governments an important role in implementing forestry policy.

Several initiatives are contributing to the process of implementing the policies defined by the two projects. The federal government approved a new extension of UTF/047/BRA in order to implement the policies proposed by TCP/BRA/6712. This resulted in the design and execution of the National Forest Program. A new project with FAO (“Strengthening Public Administration of the Forestry Sector and the National Forestry Program,” TCP/BRA/8923) was also approved. This was designed to strengthen the institutional capacity of state governments in administering forestry policy – specifically, one of the policies defined by TCP/6712/BRA. In addition, projects financed by the World Bank are being implemented jointly with FAO (GCP/BRA/054/WBG and GCP/BRA/055/WBK). These are designed to advance the proposals made by TCP/BRA/6712.

The experience gained through FAO projects designed to support Brazil’s forestry sector produced important lessons, including the following:

- a) Policy changes do not necessarily require costly projects; rather, they call for sustained action – implemented with sufficient time periods – based on clear proposals, presentation of reliable information to support the new proposals, and timely and high-quality technical assistance.
- b) Policies with a local perspective need to be developed and implemented to strengthen local institutions. Related to this is the need to focus future efforts on training human resources at the local level and creating the necessary local government institutions.

## ANNEX 2

### **Food Security Through Support for Land Access and Support Services for Production in Brazil**

#### **Project UTF/BRA/036/BRA “Guidelines for Agrarian Policy and Sustainable Development of Family Producers” and Project UTF/BRA/051/BRA “Cooperation for Sustainable Development in the Areas of Agrarian Reform and Family Agriculture”**

UTF/BRA/036/BRA came about as the result of a previous technical cooperation project (TCP/BRA/2252) implemented in the state of São Paulo, which undertook a detailed analysis of production systems in agrarian reform settlements. These studies developed innovative methodologies and verified several positive aspects of land redistribution experiences – specifically, the fact that nearly 75% of the beneficiaries were receiving income above the poverty line, with approximately 62% of their income obtained from marketing of crops. This demonstrated the vital importance of access to land as part of a strategy to achieve food security and combat poverty.

The project UTF/BRA/036/BRA began early in 1994 and was implemented by the National Institute of Colonization and Agrarian Reform (INCRA). Upon completion, it continued to operate through UTF/BRA/051/BRA, which ended in June 2001. The initial task of these projects was to produce studies that would serve as the theoretical basis for policies and for the institutions charged with implementing them. This involved the participation of some of Brazil’s most prestigious academic institutions, which were primarily responsible for overseeing the research and studies. As a result, a number of feasibility studies were carried out regarding agrarian reform settlements throughout Brazil, and a series of 12 publications was produced, containing highly useful information and innovative proposals. In addition, events were held on a national scale to engage broad participation in discussing the findings and proposals that were developed.

These actions resulted in substantive changes in policies regarding small producers in Brazil. Previously, agricultural policy (implemented for the most part by the Ministry of Agriculture) was aimed primarily at commercial agriculture, while issues of rural poverty were addressed mostly through land redistribution (under the direction of INCRA) and through rural development projects implemented in specific problem areas, particularly in the Northeast. The new proposals, on the other hand, were based on differential treatment for family agriculture. Thus, the federal government created a new Ministry of Land Policy and Rural Development, in charge of overseeing, among other issues, family agriculture. In addition, the proposals made it possible to formulate a more decentralized development strategy for agrarian reform settlements – a strategy focused on the capacities of family producers, applying different criteria according to the characteristics and problems of the productive systems of each region.

Projects supporting agrarian reform in Brazil provided a number of lessons relevant to developing a strategy for food security and for sustainable use of natural resources:

- a) Strengthening procedures for accessing land is a key component in food security strategies, since it provides the rural poor with the ability to produce food and improve their income;
- b) procedures for accessing land need to be supplemented with other actions to ensure broad access to other productive resources, particularly capital (through credit) and technical knowledge (through technical assistance services);

- c) coordinated participation by a range of actors – national and local government institutions, social movements, academic institutions – is essential in formulating effective rural development policies; and
- d) a series of projects involving effective actions can have a meaningful impact on national policy.

### ANNEX 3

#### **Evaluation of the Mexican Rural Alliance Program (UTF/MEX/045/MEX)**

The Rural Alliance Program constitutes one of the Mexican government's main instruments for agricultural and rural policy, providing a means of fostering and supporting structural change in the agricultural sector to address issues of profitability and competitiveness arising out of trade liberalization. The Alliance has more than 30 programs involving agricultural development, livestock development, animal health, technology transfer and rural development. These are being implemented at the state level with the participation of producers, suppliers of goods and services for the sector, and other civil society agents. The program is being executed in a decentralized manner, in line with efforts to federalize agricultural-sector policies and institutions. Approximately half a million producers benefited from the agricultural development programs in 1999, representing around 17% of Mexico's agricultural producers.

FAO's evaluations of the Alliance, conducted since 1998, have helped document the program's impact and results. These evaluations have helped in demonstrating the program's merits to operators, promoters and financing institutions, as well as in identifying the strengths and weaknesses of each program and proposing corrective measures for improving implementation, thus supporting the annual programming and planning process. This has made clear the importance of ongoing evaluations of all Alliance programs at the state and national levels, as well as the value of assessing their impact on agricultural activity and producers' incomes, thus making it possible to redirect public spending toward programs with the greatest impact.

## ANNEX 4

### **Generation and Dissemination of Appropriate Technologies and Food Security in Bolivia Project GCPF/BOL/018/NET “Fertisuelos”**

The “Fertisuelos” [Fertile Soils] project grew out of the fact that low profits were identified as one of the key factors in food production in Bolivia. This, in turn, was linked to the low fertility of the soils and to the extremely low use of fertilizers. Thus, the Bolivian government defined a strategy aimed at long-term self-sufficiency in regard to basic foods and the possibility of obtaining surpluses for export, through intensified agricultural production.

The project was executed in two phases: the first began in 1987 and continued until 1992, and the second ran from 1993 until June 1999, with the Ministry of Agriculture and Campesino Affairs (MACA) – which later became the National Secretariat of Agriculture and Livestock and the Ministry of Agriculture, Livestock and Rural Development – serving as the national counterpart. The project involved an intense research effort, which was conducted in coordination with approximately 70 institutions or institutional units. The research was aimed specifically at establishing economically viable doses of fertilizers for basic food crops in different types of soils in distinct ecological regions, as well as at formulating rational recommendations on fertilizers to be provided to the farmers. The second phase emphasized preparation of an improved technological package incorporating mineral and organic fertilizers. In addition, it sought to create a local credit system for purchasing fertilizers. Both phases were organized around farmers’ parcels.

As a result of these actions, recommendations were drawn up for the use of mineral fertilizers in food crops (rice, corn, potatoes and wheat), including matters of dosage, methods of application and residual effects of the fertilizers in subsequent crops. There was also an evaluation of cultural practices, density and systems of planting, quality of seeds and weed control, introduction of tools and equipment, and soil conservation practices. The set of innovations, adjusted and confirmed for different crops, began to be disseminated during the 1996/97 campaign through demonstration parcels, using fertilization practices with the greatest potential for increasing productivity. Finally, a revolving fund was established to provide microcredits for the purchase of fertilizers. This fund began by serving 25 producer groups in 1993/94, increasing to 97 such groups in 1997/98.

Experience with the “Fertisuelos” project demonstrated the importance of research oriented to increasing the productivity of crops within the context of a food security strategy.

## ANNEX 5

### **Food Security and Natural Resource Conservation through Dissemination of Sustainable Production Systems for Hillsides in Honduras**

#### **Projects GCP/HON/018/NET and GCP/HON/021/NET “Rural Development of Southern Lempira” (PROLESUR)**

PROLESUR grew out of the serious problems of poverty and food insecurity affecting the southern portion of the department of Lempira, in Western Honduras. In addition to these problems, there has been a serious deterioration of natural resources – primarily deforestation and degradation of soils and water. These conditions occur in a fragile hillside ecosystem typified by poor soils, while the predominant production systems have been based on basic grain crops (primarily corn) with very low productivity, whose prices were on a declining trend. The greatest obstacles to changing this form of production were the limitations of producers in accessing support services – particularly credit, technical assistance and training.

The first phase of the project (GCP/HON/018/NET) was implemented between November 1994 and December 1998, while the second phase (GCP/HON/021/NET) began in February 1999 and is scheduled to continue until December 2002, with the Secretariat of Natural Resources serving as the national counterpart. The central objective of PROLESUR was to combat rural poverty and achieve food security by promoting changes in the production systems, in order to bring about product diversification, increased productivity and natural resource conservation. The project’s activities were divided into a number of components, including technical assistance, training on production and organizational matters, and support to the beneficiaries’ financial institutions (community banks).

PROLESUR has had significant positive effects on diversification of production and transfer of new production systems, with favorable impact on food production, beneficiaries’ incomes, and conservation of natural resources. The most important effects have been the diversification of production (combining agricultural crops with woody species and remnants for livestock production, and incorporating other agricultural and non-agricultural products), increased productivity (40% as a result of conservation techniques and introduction of new categories), a considerable reduction in erosion and soil loss, conservation and increase in wood biomass, water conservation and improved water quality, and reduction of environmental pollution through elimination of burning. In addition, there was a major impact on training young people, community leaders, technical personnel and professors.

Experience with the PROLESUR project provides the following lessons:

- a) The key to success was the adaptation and dissemination, among producers, of a local agrosilvopastoral production system, known as Quesungual, which features management of trees and shrubs, cyclic planting of basic grain crops (corn, gama grass and beans), use of corn and gama grass cuttings for supplementary livestock production, and the elimination of burning. The availability of a production system adapted to the conditions of local ecosystems and to the specific conditions of small producers in the region where the project takes place are key to the success of actions aimed at improving food security and conserving natural resources.

- b) The fact that the production system that the project adapted and disseminated is of local origin reaffirms the need to invest in adaptive technology research, not only for technologies created in other contexts, but also for locally available technologies used by small producers.

## ANNEX 6

### **Project UNO/BOL/723/DCP “Support for Management, Conservation and Exploitation of Forest Resources in the Tropic of Cochabamba and Transition Zones of the Yungas of La Paz”**

The project came about as a result of the experiences and achievements gained in the pilot project (UNO/BOL/92/582) that began in the mid-90s. It systematically demonstrated high-profit agroforestry practices in the Tropic of Cochabamba. The project was carried out in the Tropic of Cochabamba and in the Yungas of La Paz, which, until the middle of the 90s, were large coca producing areas. In addition, the campesinos involved in this crop used a system of production based on annual cutting and burning of new forest areas. The main objective of the project (UNO/BOL/723/DCP) was therefore to promote greater diversification of production, through the introduction of new crops and sustainable production systems to replace coca, as part of the New Bolivian Strategy to Combat Drug Trafficking of 1998-2002. The project was also part of a broad program to support the forestry sector and to promote national rural development and environmental policies.

The project has directly benefited 2,500 families and, indirectly, another 750 families, encouraging an integrated and diversified agroforestry production model based on a program of participatory research and validation focusing on agroforestry and forestry activities. As a result, an ongoing process for rational use of forest resources at the farm level was initiated, demonstrating the advantages of agroforestry and forestry production systems to generate income and employment. This involved dissemination, in the Tropic of Cochabamba and elsewhere, of a number of permanent crops such as coffee, cocoa, rubber, annatto, black pepper, papaya, camu-camu, and the adoption of silvopastoral systems. The project also sought to increase the use of technology in the production of other crops grown by the beneficiary families, and promoted the introduction of beekeeping and tropical flowers. At the same time, in the Yungas of La Paz, the use of technology was encouraged for coffee and other traditional crops, including citrus fruits, plantains, bananas and annatto. In both regions, the project implemented activities to strengthen existing producer associations, supporting their administration and management.

**ANNEX 7****Strengthening Citizen Organizing and Sustainable Management of Community Forest Resources in Ecuador****Projects GCP/ECU/063/NET and GCP/ECU/070/NET  
“Campesino Forestry Development in the Ecuadorian Andes”**

The project came into being as a result of the high levels of poverty in the campesino communities of the “Ecuadorian Sierra” – a region comprised of the Central and Western branches of the Andes range. These communities cultivated the often steep hillsides (between 1000 and 3000 meters above sea level), making little or no use of soil conservation techniques. This led to severe erosion and was one of the principal causes of rural poverty. These conditions gave rise to the first phase of the project (GCP/ECU/063/NET), which was implemented between 1993 and 1998, followed by a second phase (GCP/ECU/070/NET) that began in 1999 and is ongoing.

The main objective of the two projects has been to improve the quality of life of the campesino communities through community forestry development. The project has promoted new participatory agroforestry and forestry practices and criteria through its technical teams, so that the campesinos and, in particular, women would gain an appreciation for the economic value of the natural resources they possessed. This has resulted in major achievements benefiting approximately 250 campesino communities with some 6,400 families, applying soil conservation practices, adopting agroforestry production systems and establishing forestry plantations on approximately 5,000 hectares. Community nurseries were instituted, transplanting more than 1.8 million plants to family and communal land. In addition, some 400 community agroforest gardens were established, along with dozens of small industries for forest products such as mushrooms, medicinal herbs, basket making, production of trout and capers, etc., leading to improved income for campesino families.

Experience with the project suggested that a technology-and-production proposal adapted to the ecosystems and characteristics of the producers is essential, but is not sufficient to improve the food situation. Campesino organizing is essential, particularly to solve collective problems, such as poor management and the deterioration of forest and other natural resources of the community.

## ANNEX 8

### Creation of Non-Agricultural Jobs in Brazil

#### **Project UTF/BRA/040/BRA “Support for the National Job Creation Program” (PRONAGER)**

PRONAGER has been one of FAO’s most important programs in Brazil in recent years. It came about through a technical cooperation project entitled “Regional Planning with an Emphasis on Generating Income and Creating Jobs” (TCP/BRA/2254) implemented between March 1992 and March 1993 by what was then the Secretariat of Regional Development. The promising results obtained contributed to the design of PRONAGER, which was implemented starting in June 1994 under the direction of the current Ministry of Regional Integration. FAO has been providing technical assistance to PRONAGER from the start of its execution, through the Regional Office in Santiago.

PRONAGER’s structure consists of a central module, located in the capital city (Brasilia); regional modules (under the direction of the Superintendency for Development of the Northeast, SUDENE, and the Superintendency for Development of the Amazon, SUDAM, in the Northeast and Northern regions, respectively); state modules (Alagoas and São Paulo); and municipal modules (Vitoria-Espirito Santo and São Paulo-SP). The central module oversees conceptual and methodological aspects and is responsible for technical supervision of the other modules, which are administratively and financially autonomous. The program has coordinated its actions with other public-sector institutions.

PRONAGER has been oriented to creating productive jobs and income for marginalized populations, consisting mostly of persons who survive primarily through sporadic individual, nonskilled, low-income work. The program’s main activities are focused on mass, short-term training (generally 45 days) with a high motivational content, aimed at instilling self-esteem and identifying vocations and potentials among the beneficiaries. It has also promoted the formation of collective enterprises for the production of various goods and services. As of September 2000, the program had held laboratories for some 34,000 persons, creating embryonic enterprises that, upon gaining external support, subsequently became viable. According to evaluations conducted, the new microenterprises accounted for the direct creation of approximately 6,200 jobs.

The experience gained to date has provided the following lessons:

- a) Non-agricultural activities are vitally important in a food security strategy, particularly for the poorest, marginalized population that lacks access to land, for whom agricultural activities hold little promise. This also helps reduce pressure on the demand for land.
- b) The promotion of non-agricultural activities requires the participation of institutions that traditionally were not part of the agricultural and rural development system, particularly at the local level. Because of their knowledge of other economic sectors and their experience with technological, market and financing matters, these institutions play an indispensable role.

## ANNEX 9

### Projects for the Eradication of Cross-Border Diseases

Eradication of cattle screwworm (*C. hominivorax*) in North Africa, in 1992, was achieved through implementation of the multinational project SCNA/INT/001/MUL, at a cost of US\$350,000, thus preventing this cross-border disease from becoming established in the animal and human populations of Africa and Europe. The disease was introduced through the transport of parasite-infested animals from the Americas, where screwworm is native and has been responsible for high economic losses to the livestock industry and serious human infestations. Recently, in an effort to support livestock development in Cuba, Haiti, Jamaica and the Dominican Republic (countries that have been affected by the disease), FAO and the governments of those countries have established two technical cooperation projects for the control and ultimate eradication of the disease. These are TCP/CUB/6613 and TCP/RLA/8927 ("Control of cattle screwworm"), the latter of which is now being implemented. These projects have also helped reduce the risk of reinfestation in North and Central American countries currently free of parasitosis.

Another notable example of cross-border disease is the tropical tick *Amblyomma variegatum*, introduced to the Caribbean in 1828 through infested animals from Africa. The disease is currently established in more than 12 islands. This tick transmits haemoparasites to domestic animals, causing serious harm to livestock. At the request of the affected countries, FAO, together with other international organizations, began projects GCP/RLA/130/IFA ("Tropical Bont Tick Research Program in the Caribbean"), GCP/RLA/120/USA, GCP/RLA/121/USA, and GCP/RLA/120/MUL ("Caribbean *Amblyomma* Program") to eradicate the disease. The disease has progressed substantially, and it is anticipated that the French territories in the area will, in the near future, increase their activities to combat the parasite, in order to reduce the associated economic losses and to prevent the risk of its being introduced to countries on the American continent that are currently free of the disease.

## ANNEX 10

### **Project TCP/RLA/8929 “Modernization of Animal Health and Food Control Services in the Andean Countries”**

In accordance with the express wishes of the governments of the Andean countries (Bolivia, Colombia, Ecuador, Peru and Venezuela), the objective of the project was focused on supporting the design of national plans to modernize and strengthen animal health and food control services, in line with WTO requirements.

The first stage consisted of determining the current status of official services related to legislation, certification, inspection, risk analysis, institutional modernization, epidemiologic surveillance, diagnostic capacity, and the ability to respond to health emergencies for each of the three subject areas. The analysis made it possible to establish the most important comprehensive needs for technical assistance, as well as for human, material, financial and other resources, in order to adapt the services to the framework of the WTO.

The second stage consisted of preparing national plans of action for a set of projects, with a five-year time horizon. All of the activities were conducted in a comprehensive manner by national teams made up of the main players in the agrifood chain, including primary producer associations, processors, transportation carriers, marketers, importers and exporters, etc., as well as government agencies involved in health monitoring of some phases of the agrifood productive and marketing chain. In the Andean countries, the search for solutions to an issue of common concern to American nations – employing self-analysis and autologous solutions – has been highly successful in dealing with health issues related to international trade, within the framework of the WTO, providing the foundation for a comprehensive reformulation of the issue.

With the preparation of project profiles for each country, the governments have a concrete tool for solving the most important problems in the three subject areas addressed by the project. Most of the proposed projects do not require external financing; for those that do, FAO will support the governments in finding donors or other sources of financing.