

**THE TRANSITION TO SUSTAINABLE AGRICULTURE:  
A TWO YEAR REVIEW OF AID'S AGRICULTURAL AND RURAL  
DEVELOPMENT PROGRAMS AND AN AGENDA FOR THE 1990S**

**Committee on Agricultural Sustainability  
for Developing Countries**

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## INTRODUCTION

This Agenda is the product of two years of observation of AID's agricultural and rural development programs and their careful analysis by Committee members. To avoid making longer an already lengthy presentation, the Committee has had to express in few words its views of many aspects of AID's work which deserve discussion in greater detail.

As a result, the Committee's Agenda does not attempt to address or evaluate all aspects of AID's agricultural and rural development programs. It says little, for example, about what AID is doing in such areas as rural infrastructure, agricultural credit, and agricultural policy reform, or the relation of those programs to agricultural sustainability as the Committee broadly defines it. Nor does the report address in any detail the sustainability pluses and minuses of directly relevant AID programs in natural resource management, pesticide control, integrated pest management, irrigation, or forestry. It is the Committee's intention to address these other aspects of AID's programs at a later date. Rather, our focus here is on AID's record in institutionalizing the concepts and techniques of agricultural sustainability.

The Committee is grateful to the many people in AID -- in Washington and in the field -- who did so much to inform its views and recommendations. Without their constructive and critical evaluation, this report would not have been possible.

R.O.B.

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The Committee on Agriculture Sustainability for Developing Countries has been in existence for two years, during which time it has intensively examined AID's agricultural programs and projects. On the basis of the insight and experience gained at this time, the Committee has concluded that substantial changes in these programs are now needed. It believes that the advent of a new administration and a new Administrator as well as the winding down of the cold war and the emergence of a whole new environmental dimension in international relations provide an ideal and badly needed occasion for AID to reexamine its progress in helping the developing countries to achieve agricultural sustainability. Hence this Agenda.

At the very outset, the Committee recognizes that agricultural sustainability, the focus of its own mandate, even as important as it is, cannot be thought of or approached in isolation. Accordingly this Agenda will attempt to spell out the crucial links between sustainability and world hunger, between natural resource protection and controlling population growth, between sustainable economic growth and a meaningful attack on poverty, and in the long run between agricultural productivity and global warming -- problems that are intricately related to each other. Fortunately thinking on these subjects and the lines between them has evolved in the past two years, with important implications for AID's agricultural policies and programs.

- Political leaders have been shaken as never before by a recognition of the grave dimensions of emerging global environmental problems -- global warming, tropical forest destruction, ozone layer damage, soil erosion, desertification, loss of biological diversity, and air and water pollution, all of which are complicated and amplified by relentless growth in the population of Third World countries. There is an emerging consensus, for the first time including the principal leaders of the world, that all nations must begin, for their common good, to work closely together to respond to these threats.
  
- There are growing concerns about the Third World hunger, stoked in part by declines in global grain stocks. In sections of Africa and Latin America, growth in food production is not keeping up with population growth. At the same time, because of the mounting weight of external debt, it is becoming harder for many developing countries to find the foreign exchange to buy food from other countries.

- Recognition is growing that the world's natural resource base (soil, water, trees, and vegetative cover) on which agricultural production depends, is in too many places being rapidly and sometimes irreversibly degraded.
- Moreover, new and competing demands are beginning to be made on world agriculture to provide renewable sources for fuels and for many materials now being met by non-renewable resources. This could lead to new agricultural prosperity if managed in a sustainable way -- or to further degradation of the resource base and to greater hunger for the poor if not managed correctly.
- On the positive side, the United States now has a president who has pledged to be a leader in environmental action at home and abroad. He has declared that the achievement of sustainability must have a high priority in all development efforts.
- In the United States and in other developed countries, attention to, experience in, and political support for agricultural sustainability<sup>1</sup> at home and in the developing countries is growing rapidly.

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<sup>1</sup>The Committee defines agricultural sustainability as the ability of an agricultural system to meet evolving human needs without destroying and where possible improving the natural resource base on which meeting these needs depends. Beyond this broad conceptual definition, the Committee attaches the greatest practical importance (a) to defining and determining what is sustainable at a given place and at a given time (what is sustainable at one place and in one year may not be sustainable at another time and place); and (b) to examining thoroughly not only the ecological and economic determinants of a farm and its practices but also the cultural acceptability of proposed changes, the institutional and political sustainability of those changes, and the supporting local and national institutions and infrastructures. The Committee discusses this question in some detail in Annex A. In Annex B it lays out the programmatic elements of what it believes could and should be measures taken toward sustainability for inclusion in AID agricultural programs and projects. Obviously, only a few elements could be included in any given project, at least initially.

The Committee recognizes that sustainability is not something new. Almost by definition long-established traditional agricultural systems -- from the intensive rice culture of Asia to world-wide systems of slash-and-burn agriculture -- are or were in their day sustainable. If not, the systems -- and the civilizations that depended upon them -- disappeared.

-- Congress has in its last two sessions written into legislation new mandates for AID to make sustainability the focus of development, including specifically agricultural development.

But despite these problems, the Committee believes that AID, as presently organized, can and must do a better job in helping developing countries achieve agricultural sustainability, in helping protect their natural resources, and in helping defeat hunger and poverty. And if there is -- as we all must hope -- a new infusion of new resources and resolve, AID can become a key in the statement for change that is so badly needed.

#### AID AND THE FIGHT FOR FOOD SECURITY AND NATURAL RESOURCE PROTECTION

The Committee attaches special importance to AID's finding ways to help developing countries feed their increasing populations without destroying the natural resource base on which this growth in food production necessarily depends. This objective takes on greater urgency with each passing year and its solution must become a principal focus of U.S. policy. A reasonable degree of food security will become increasingly difficult to achieve the longer that effective and broad scale efforts to attack its root causes are postponed. There will be no easy or early solution. Rapid population growth will continue well into the next century even as fertility rates drop. Inequities in land tenure will aggravate the destruction of natural resources as farmers, having few other options, will continue to heavily exploit marginal lands. Earlier possibilities of expanding agricultural production into unoccupied but arable lands is almost exhausted, and much of the recent expansion onto land with steep slopes, tropical forest land, and very dry areas is unsustainable -- or sustainable only at a very high cost. In such vulnerable areas environmental degradation and growing poverty have become inextricably entwined.

There is nothing on the horizon to indicate the possibility of another major scientific breakthrough which could provide an increase in food crop productivity of the magnitude provided by the "Green Revolution" of the 1960's. In fact, considerable efforts will be necessary just to maintain the present productivity of major food crops. As a result, most of the expansion in food supply necessary to feed the ballooning population of Third World countries will have to come from better resource management.

All this cannot be achieved by concentrating on increasing the productivity of the best lands alone. Even though these

lands can probably produce enough to support the projected population levels of Third World urban areas, half of the developing world's farmer<sup>2</sup> families live on less well-endowed lands and also must be fed. Most of them have no realistic prospect of finding meaningful livelihoods in the cities or on the better lands. Hence, the world must maximize productivity from every bit of arable land, and do so in a sustainable fashion.

So closely connected to the problems of food security and poverty that it cannot be separated is the proper management and conservation of natural resources -- soil, water, trees and vegetative cover. Without more success in resource management and conservation, no real measure of poverty alleviation or food security can be achieved in the next century.

#### AID'S CAPACITY TO HELP MAKE THE TRANSITION TO SUSTAINABILITY

For several years now the United States, as a global leader in science and technology, has been looked to by people in this country and throughout the Third World to provide greater leadership in the fight to maintain some acceptable margin of food security, to preserve the natural resource base, and to bring Third World poverty under control. This is logical as these are areas where the United States has very often taken the lead. Prompted by Congress and the environmental community, AID has initiated some important resource protection programs. But this effort is still too small and often not connected closely enough to AID's mainline agricultural programs.

The Committee believes that AID has the capacity to better address these tasks, and on a scale which can make a real difference. It has considerable comparative advantages over other development agencies in helping developing countries make the transition toward sustainable agriculture: good people with a combined millennium of experience in agricultural development and natural resource management; field staff which can promote, monitor and encourage promising initiatives; long experience and success in human resource development, an area in which AID has a recognized comparative advantage over many other development agencies; mechanisms to mobilize grant funds and PL-480 counterpart funds to help meet local costs and to help poorer countries which can't afford to borrow; a good relation with U.S.

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<sup>2</sup>When the Committee uses the term farmers, it wishes to emphasize that it uses it in a very inclusive way to include the woman farmers too often overlooked or discriminated against, as well as pastoralists, woodcutters, fisherman and the landless rural poor.

PVOs; a demonstrated willingness and ability to help build cooperating nongovernmental organizations in developing countries; and experience in working closely on collaborative efforts in partnership with developing countries and with talented people in U.S. universities (particularly the land grant universities), with U.S. scientific institutions, and with U.S. contractors.

AID also has some distinct disadvantages: growing budgetary limitations; constraining personnel ceilings; Congressional restrictions on its activities; interruptions of country programs when political setbacks occur; incentive structures which too often favor short-term projects; political pressures from some segments of the agricultural business community which oppose AID efforts that might strengthen potential foreign competition or lessen foreign dependence on U.S. agricultural producers and U.S. exports of chemical inputs; and unproductive reporting and accountability requirements.

#### CRITERIA FOR MEASURING AID SUCCESS

As a very central thesis, the Committee emphasizes -- as Congress and AID itself has done -- that AID's role in helping developing countries achieve sustainability can only be supportive and collaborative. Outside development agencies can do little more than act as catalysts for development and offer the peoples of developing countries options that they wouldn't otherwise have. The primary responsibility for development lies with the people of developing nations themselves. The day of the expatriate adviser, technician or researcher handing down "wisdom" -- particularly externally derived wisdom -- is over. AID fortunately recognizes that the only sound psychological and political basis on which to work with the people of developing countries is as equals, in building developing countries' capacities to solve their own problems. Only responsiveness to developing peoples' expressed desires (sometimes tactfully stimulated but nevertheless their own), a building on indigenous knowledge and practice, and a willingness to let developing peoples solve their own problems are an acceptable basis for cooperation. And in the process AID must continue to foster wide local participation particularly by the poor, the landless, and women.

Within these broad parameters, the Committee holds that AID's agricultural and rural development programs should be guided by several common sense principles drawn from experience, principles which apply with equal force to the agricultural development programs of other agencies.

- (1) AID's agricultural programs to the greatest extent possible should be modeled on the participatory approach. The farmer, the farm, and the farm village must be the foundation of all that AID and other outsiders do or try to do in agricultural development -- research, extension, project implementation. Basic to success are farmers' intimate knowledge of lands that they and their ancestors tilled, their sense of their opportunities and limitations, their sensitivity to their survival systems, and their strongly felt need to guide their own destinies.
- (2) AID, in considering what new techniques to introduce into projects, should continue to recognize that farmers will not incorporate desired changes or increase their labor unless they are convinced that early returns will be forthcoming and unless their survival system will not be jeopardized. In short, the emphasis in pursuing both growth and environmental protection must be on finding economic incentives, and very specifically incentives for conservation.
- (3) AID must recognize that the sustainability of all agriculture lands must be the subject of concern. More than it is today, AID's target in agricultural development must be the poor majority of farmers including the landless. Help to prosperous, large-scale farmers seldom trickles down to the small farmer. AID should pay special attention to finding alternatives to slash-and-burn practice where they are unsustainable and to supporting farmers living on the viable but vulnerable, less well endowed rainfed lands. These lands provide livelihoods and food for the majority of the world's farmers, as well as food for millions more. Heretofore, ecologically sustainable methods of slash-and-burn with long rotations were available. Today, however, the growing number of farm families, the lack of land, and the shortened rotations thus imposed make formerly sustainable methods unsustainable in many parts of the world.
- (4) In line with the Congressional mandate for AID to combat poverty, AID should, very consciously focus on raising small farmers' productivity. The Committee recognizes that this can be achieved principally through economic growth -- but only if that growth is real and sustainable. Evidence shows that raising the well-being of the large mass of rural poor -- and not just raising the income of more prosperous or more skillful farmers -- is the engine for driving prosperity in developing countries. The poor often unwittingly damage the resources on which their

survival depends. (Unfortunately, many well-to-do farmers and ranchers are equally or even more destructive of natural resources, though they have within their means the ability to improve the quality of rural life for all.) In the final analysis, development agencies must be partners in finding ways to help developing nations provide incentives for conservation and in addressing all the causes and symptoms of poverty -- illiteracy, ill-health, insecurity in tenure, as well as the more classic needs for economic and social infrastructure -- schools, health centers, roads, markets, storage, etc. Developing country policies that too frequently discriminate against, disenfranchise, and even oppress rural citizens must also be addressed. AID cannot hope to tackle all of these problems alone, but a plan which includes other development agencies and organizations and allows each to do what it's best qualified to do is badly needed in every developing country.

- (5) AID normally should not launch "agricultural sustainability" projects per se, except as is occasionally useful politically and educationally. Rather all projects, and in the end all agriculture, should be structured to achieve sustainability and should be subjected to the rigorous multi-disciplinary and multi-faceted tests of that discipline.
- (6) In attempting to establish sustainable systems, AID should avoid the complications of earlier overambitious "integrated rural development projects." But particularly at the start, today's projects must be as simple as possible and always within farmers' physical and financial reach. In most cases, AID projects should begin with the introduction of one or two solid elements which farmers are most likely to perceive as meeting their needs. Only after farmer income and confidence increases should new elements be added. Help to farmers must seek to move eventually to the point where farmers themselves become successful experimenters, able to make, or find out how to make, the successive changes in farming practices required by the evolving dynamics of agriculture, resource management, and population growth.
- (7) AID must also give greater attention to improving the status of woman farmers. In many areas, the majority of farmers are women who provide the bulk of farm production. There is a strong global trend towards feminization of rural poverty. Specific efforts must be made to meet the needs of women farmers and their families -- for secure land tenure, for better access

to credit, for specially designed extension, for access to information on family planning, and for technologies that will reduce the time needed to carry out their various functions. It must be specifically recognized that sustainability will be a chimera until women farmers are no longer discriminated against and instead are helped to position themselves to receive the rewards for and the dignity of their labor.

- (8) Special attention must be given to finding better ways to disseminate information on all aspects of sustainability and techniques for achieving it. AID officers must become effective missionaries for the "new" agriculture. Yet, farmers in general are no more moral or benevolent than others. Most farm families, when faced with the problems of short term survival and debt repayment or with prospects for quick profits, tend to disregard sustainability or natural resource protection. But this need not be true. Many strategies which encourage sustainability through a combination of better education, agricultural extension, and incentives for conservation are already available and can be developed.

#### A QUICK LOOK AT AID'S RECORD ON PROMOTING AGRICULTURAL SUSTAINABILITY

How has AID as an institution done in putting these sustainability principles into practice? In answering this question, this paper will look principally at the agricultural and natural resource aspects of this record rather than in any detail at the broader related problems of growth and poverty alleviation. Later in this paper, AID's record is discussed in more detail and the Committee makes concrete recommendations. Here, however, the Committee summarizes its views of the overall impact of AID's actions and inactions.

First, the good news. Over the last two years AID has made some real progress.

- AID has established a body of good overall natural resource policies.
- AID has begun to integrate practical lessons about agricultural sustainability into much of its staff training and into workshops and seminars for people from developing countries.
- BIFAD's support staff has taken a lead on sustainability, bringing representatives of the

academic and environmental community together for three productive conferences on agricultural sustainability, resulting inter alia in greater attention to this concept among academic practitioners of development.

- AID' has sponsored several centrally-funded programs using sustainability criteria, programs focused on the problems of natural resource management in agricultural development.
- AID missions have supported some projects aimed quite specifically at establishing successful examples of sustainable agricultural development, including ones aimed at farmers on some of the less well endowed lands.
- AID and its officers have been very open to the approaches of the Committee and to others concerned about agricultural sustainability. The Agency has sought the Committee's political support and invited its participation in a broad spectrum of AID activities.

On the other hand, AID's two year record on promotion of agricultural sustainability has not been as comprehensive nor as productive as it could have been or as its rhetoric would suggest. Nor has support for and understanding of sustainability principles been as broad as needed to establish sustainability as a major focus for AID's agricultural programs. Much of the good that has been achieved is the result of determined efforts by a small band of able people, mostly in Washington.

- Despite growing rhetorical commitment, AID does not yet have an overall strategy for incorporating sustainability into the mainstream of AID's policy and programs. Inertia and some resistance is still strong and must be overcome. AID's top management has not yet given its staff a strong sense that sustainability in agriculture enjoys high priority and is here to stay, thus encouraging delaying tactics by those who don't support sustainability and by the fence sitters that all organizations have.
- Despite AID's agreement in principle to do so, it has yet to systematically and critically reassess each of its agricultural, rural development, and natural resource projects in terms of sustainability. It has not instructed its field missions to do so, nor given them its thinking about how this best can be done conceptually. As a result, few field missions have gone very far in incorporating thinking about sustainability into the planning and implementation of their projects.

- There is very little evidence that AID's field missions have made agricultural sustainability a major part let alone a central focus of their discussions with developing country governments and local organizations -- at least on a par with their discussions on agricultural price reforms.
  
- A rearguard of AID officers -- mostly economists -- continue to resist efforts to make sustainability a focus of AID's agricultural programs. In arguing that growth above all must be the aim of all AID's efforts, they tend to hold that attention to sustainability must somehow await the achievement of growth, or alternatively that nothing else can be achieved "until they get the prices right." Unlike the Committee which believes that efforts to achieve growth which ignore the small farmer or fail to protect the natural resource base are illusory and unsustainable, these AID officers appear willing to accept the costs of delaying efforts on resource protection and on help to small farmers. In some cases they urge that "some other development agency" be charged with assuming responsibilities for natural resource protection and for helping the small farmer while AID concentrates most of its efforts on achieving "growth." In the Committee's view, too many AID economists urge a concentration of AID efforts on structural adjustment in support of agricultural reform largely to the exclusion of technical programs in support of farmers. Some even seem to look at the growing acceptance of the environmental paradigm in development as a threat to their professional standing.
  
- AID has avoided or postponed efforts to devise its own overall strategy for development which would conceptualize the division of tasks among development assistance institutions -- particularly but not solely between AID and the World Bank. Such an effort is badly needed, and it should be followed by much broader discussions with other development agencies on a country-by-country basis. If based on close consultation with the developing countries this would allow each institution to focus its efforts not only on what it does best but also on assisting developing countries in doing what other institutions realistically cannot or will not do. Too often AID leaves farm-level efforts to the World Bank. This approach fails to recognize that the Bank, operating through large loans with no grants and with little field staff, is hard placed to ensure effective attention to the small farmer.

- There is a worrisome tendency in some bureaus and missions to not recognize the urgent need for helping the mass of small farmers on lands of lower potential. Too many would concentrate AID's efforts largely on assisting farmers -- including larger and more prosperous farmers -- on the best lands to maximize food production, efforts on which the Committee believes the World Bank can better concentrate.
- Perhaps even more troublesome to the Committee, there is real reason to wonder whether AID will long be able to adequately respond to the challenges of achieving sustainability if it continues to lose its able cadre of agriculturalists through attrition and retirement. If AID doesn't replace its excellent technical experts and find new people to meet the emerging environmental aspects of development, it will put itself in an impossible position to respond in the future.
- AID has reduced its support for the international agricultural research centers under the umbrella of the Consultative Group for International Agricultural Research from 25 percent of their overall budget to 17 percent and indicators to may gut further. This is happening just at a time when the developing countries are urgently counting on the international agricultural research centers to develop new systems and technology to help achieve higher productivity and more resilience.
- AID's progress in linking natural resource and environmental policies with specific agricultural and rural development policies in practice is uneven among bureaus. Too often agricultural and natural resource programs are seen as domains rather than as two sides of a single problem.
- Despite a lot of positive rhetoric, the Agency has still done little to devise effective and innovative ways to help woman farmers.
- AID has taken the lead that it had signaled it would take within the international development community in sponsoring joint efforts aimed at better understanding and broader application of sustainability principles.
- There is some but still insufficient long-term (10-15 year) Agency commitment to specific agricultural projects. Nor is there yet enough attention to how important programs can be supported over the long term.

- For the fourth year in a row, in fiscal year 1990 the Administration cut its request to Congress for funds for AID's development assistance programs in agriculture, rural development, and natural resources. These cuts have been at least acquiesced to by AID's management which at the same time has asked Congress for increases in appropriations for most of their other programs.
- Most serious, in many field missions where it counts most, there is declining AID attention to farm-level projects, less contact with host country officials on agricultural production (as against attention to agricultural policy and reform) and less contact with farmers and farm conditions.
- The restrictive effects of all the aforementioned factors are magnified by declining appropriations, an unfortunate growth in accountability requirements and formal reporting (the latter quietly opposed by AID officers), and a reduction in travel funds for both headquarters and field staffs.

In sum, AID has not yet made sustainability an organizing focus for its agricultural programs nor has it yet institutionalized the concept and practice of sustainability by bringing it into every AID activity as it has said it would.

COMMITTEE RECOMMENDATIONS FOR PRIORITIES FOR AID'S AGENDA FOR THE COMING FOUR YEARS

All of this adds up to the Committee's view that the United States urgently needs a more vigorous and rejuvenated AID agricultural and rural development thrust if our nation is going to meet the Congressionally-mandated and Presidentially-endorsed target of helping developing countries achieve sustainability. It will also require major changes in overall Agency attitudes and procedures. How best can this be achieved? First and foremost, the Committee believes that AID must, by leadership from the top and with Congressional support, be psychologically and politically transformed from a, somewhat dispirited agency with declining resources into a proactive, aggressive force for needed change. AID must turn from being an organization devoting most of its time to paperwork to being a much more action-oriented agency. This observation in the Committee's view applies to all AID's programs not just to its agricultural efforts.

Secondly, AID needs to establish a more rigorous hierarchy of priorities, to do fewer things and to do them better. The

Committee believes that AID should establish three overriding objectives: bring global population growth under control; increase the capacity of developing countries to feed their people in a sustainable fashion while protecting the natural resource base; and help developing countries meet the challenges of global warming, particularly as it impacts the problems of energy development. It is the attention to these longer range problems and a long term commitment to their solution that must mark the United States' and AID's work in the developing countries in the next decade. There are other AID efforts which the Committee supports (p. 15), efforts which will reinforce and sustain these objectives. But the achievement of a meaningful level of population control and food security and the abatement of the threat of global warming are of such transcending and intertwined importance that they must have the highest priority.

If this Committee concentrates attention in this Agenda on the agricultural and natural resource side of this equation, it is not because of any neglect for the importance of the other two top priorities. Rather it is because the Committee has a special mandate in agriculture and natural resource protection. Also, there are qualified, well-informed organizations addressing the problems of population and global warming which already operate effectively and which eloquently speak for themselves. The Committee actively supports their programs and objectives.

Of the major changes required if AID is to become a proactive, effective organization helping developing countries achieve agricultural sustainability, the Bush Administration should publicly and more specifically recognize the urgency, the enormity, and the priority of agricultural sustainability and of better environmental and natural resource management. Secondly, AID's top management must begin to actively espouse the proposition that meeting these challenges will require much greater efforts and, yes, greater resources. This means that just as soon as it is politically possible, more money and manpower must be made available for top priority programs. Extra money and people are very obviously needed now and the Committee believes that the Executive Branch and the Congress in order to provide them should begin to seek authority to divert the necessary funds from AID's security assistance accounts.

The Committee recognizes the objective importance and political necessity of reducing overall budgeting deficits. But it is convinced that the winding down of the cold war provides the engine for finding new resources. Fortunately, the rationale for AID's work is no longer a cold war one. Both the political and career leaders in AID itself must assume a special responsibility for leadership in seeking new resources, a task in which the Committee will help if AID moves in the right direction.

Even before new resources become available, the Committee believes that AID can begin to transform itself and suggests the following priorities for early action:

- AID should examine all its existing agricultural and rural development projects to ensure that they are in fact sustainable and that appropriate sustainability techniques are incorporated into every one of its agricultural projects and programs.<sup>3</sup>
- In as many developing countries as possible, AID should seek to create new models for sustainable agricultural development, in particular by collaborating in such efforts with local organizations, other development agencies, U.S. and indigenous PVOs and other interested groups (see p. 19).
- AID should provide increasing support, through the international agricultural research centers, the qualified regional agricultural research centers, and the CRSP system, for particularly urgent farmer-oriented agricultural research. AID should urge these

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<sup>3</sup>The kinds of elements which the Committee believes should be included as appropriate in AID agricultural programs or projects are:

- 1). The development and adaptation of integrated pest management.
- 2). Techniques which conserve and improve soils.
- 3). Developing and making available improved plant materials which will increase productivity, reduce plant stress, augment fertility, reduce the need for pesticides and herbicides, and produce higher farm income.
- 4). Improved cropping techniques.
- 5). Techniques for improved irrigation and for low-cost supply and conservation of water.
- 6). Techniques which meet needs for farm and village energy, preferably from renewable sources.
- 7). Means of protecting forests, grasslands, wetlands, and coastal systems that must be used as common property by villages or which if more distant impact the sustainability of farms.
- 8). Elements of necessary rural infrastructure needed for agricultural production, storage, processing, and commercialization.
- 9). Techniques which incorporate cattle, small ruminants, fish and poultry into farms.

These are spelled out in greater detail in Annex 3.

organizations to do even more to concentrate their research on sustainability, emphasizing the participation of farmers in research planning and implementation (see p. 19). AID should also encourage greater support for such agricultural research by other development agencies.

- AID should address itself much more intensively to the task of finding new and better ways of adapting and spreading farmer-accepted and technically-successful techniques and systems for increasing productivity to larger and larger areas. AID should rely not only on national extension organizations, where viable, but also on local organizations and where appropriate on external PVOs (see p. 23).
- AID should intensify its support for training at all levels -- for its own people from top down as well as for farmers and developing country officials -- in the new techniques of sustainability (see p. 27).
- AID should take the lead in devising a game plan, with the World Bank and other development agencies, for combined and coordinated efforts to help developing countries achieve sustainability.

These are the immediate and overriding agricultural development priorities that the Committee sees -- for AID and for the developing countries. AID can and must play a leading role in achieving these objectives by providing the spark, the enthusiasm, the necessary optimism in face of desperate need, as well as a sense that the efforts of individual farmers -- if properly mobilized and motivated -- can bring about enormous change.

The Committee recognizes the value and importance of off-farm facets of AID's agricultural approach, notably expenditure on badly needed rural infrastructure, continuing attention to and support for agricultural reforms, and continuing dialogue with developing country governments on the array of agricultural and related problems that they face. There are also, as already indicated, other AID programs outside what is narrowly called agriculture and rural development but which nevertheless contribute to agricultural sustainability and which the Committee supports:

- Programs for the preservation of biological diversity.
- Watershed and forestry programs.
- Locally based health programs.

- Education programs, particularly for farm families.
- Women in development programs.
- Non-farm rural employment programs and other programs which improve the quality of rural life.

But in the final analysis, success in achieving all agricultural sustainability and indeed all development objectives depend on success in leveling off Third World population growth. As the Committee has repeatedly said, population and family planning programs must continue to be given the highest priority. Without it, there can be no longer range agricultural sustainability. AID's leadership should give population programs much more vocal support and push.

#### BASICS OF AID AGRICULTURAL PROGRAMS: AID POLICIES AND STRATEGIES

From this point on, this Agenda will look in greater detail at the basics of AID's agricultural development programs, beginning with AID's lack of progress in incorporating the principles of sustainability into its policy statements and strategies. First and foremost, it has not gone nearly far enough to bring these policies to action in the field. AID's policy of decentralizing most of the authority to field missions for determining program priorities has not worked to the advantage of sustainability. Most developing country governments are still largely indifferent to sustainability considerations and many AID field missions are out of touch with recent thinking on this subject. The Committee recognizes that on balance a system of field-based initiative in program planning combined with careful Washington review by multidisciplinary teams (which should include competent people outside AID) should be workable. Strong participation in this process by developing country governments and peoples down to the farm level is basic to the integrity of the whole process. But in the Committee's view, Washington review and in some cases veto is also necessary to ensure a broad global perspective and the inclusion of new thinking in such areas as agricultural sustainability. Also, Washington review can help field missions resist unwise host country proposals, motivated as they often are by short-term political considerations and not always designed to meet longer term tests.

The missions' annual action plans, country development strategy statements, and more specialized country strategies on agriculture and natural resources are the vehicles for field-level planning efforts. And they should all focus to a much greater extent on defining how agricultural growth and natural resource protection can be achieved together. The Committee has

reviewed a number of these documents and has found an unsatisfactorily small number that have really come to grips with agricultural sustainability. And as already indicated, very few missions have rigorously tested their own projects to this end. In discussing this obvious gap with the best and the brightest of AID's field officers, the Committee has found no resistance to the proposition that sustainability is a proper target for AID's planning and documentation. Nor has the Committee found any disagreement among them about the need to weigh and evaluate sustainability's various facets -- environmental, economic, political, cultural, and institutional. Field officers, when asked why they have not done so, usually respond that they are very busy and that so far they have not been challenged by Washington to think through agricultural problems in this context or given a framework in which to do so. Some even say that they are not sure whether AID's top management is really serious about its endorsement of sustainability.

The Committee again strongly recommends that AID provide an early requirement to field missions that sustainability should be factored into missions' plans, strategies, and projects and be given guidance on how to do so. AID's leadership has indicated for over a year that it would do just that. The Committee also recommends that beginning now, all AID missions' plans and strategies be reviewed in Washington for their specific attention to sustainability. If they fall short in this regard, AID-Washington should require revision.

In contrast to weakness in most field-based policy formulations, many AID-Washington strategies and policy statements illustrate real progress in better reflecting advanced thinking on agricultural sustainability and agriculturally-related natural resource management. But even these improved strategies and statements have failed to convey the necessary sense of urgency or provide a detailed road map of where to go and how. For example, the Committee has found no existing strategy that focuses comprehensively on the problem of hunger and food security, let alone on its relation to sustainability. The Committee urges AID to formulate an overall strategy on how AID, together with other development agencies, can contribute to meeting the food security problems of developing countries. Such policies must not be limited to thinking on famine relief but must carefully integrate the best thinking on poverty alleviation and natural resource management. AID's natural resource management policy statement should also directly address the food security conundrum.

And as the Committee expressed early in this paper, AID badly needs to set forth a basic overall strategy which establishes how it proposes to pursue the goal of agricultural sustainability. Such thinking should be incorporated in an updated version of AID's overall agriculture policy paper, which

is deficient and out of date. The Committee urges its early revision to incorporate the full dimensions of natural resource protection, food security issues and agricultural sustainability.. AID should very specifically recognize in such statements that most of the increases in global food production will have to come from better resource management.

AID's most recent high-level formulation of agricultural policy, the short "Focus for Agency Agricultural Programs", dated May 1, 1987, reflects, in the Committee's view, important policy elements that favor sustainability: "maintaining and enhancing the natural resource base", a mandate that surely encompasses all or most aspects of sustainable agricultural systems as the Committee sees them; a concentration on helping the "poor majority" of Third World farmers; and the need for "the preservation and if possible the improvement of the natural resource base."

However, the Committee believes that the 1987 Focus Statement should go further to more fully embrace other aspects of the concept of sustainability. First, there is no recognition of the centrality of agricultural sustainability per se. Also the goal "to increase the incomes of the poor majority and to expand the availability and consumption of food" (presumably for all Third World people, not just farm families), while important, is not comprehensive enough. Poor families without income are too often just on the fringe of some market economy and therefore are at a disadvantage in acquiring the things they need for a better life and indeed for achieving sustainability. Even the poorest farmers have a desire to improve their situation and not remain just marginal farmers. Also often just as important for many poor farmers as cash income are their survival systems. The heart of this thought may be embraced in AID's definition under "food availability." However, the Statement would be clearer if expanded to specifically recognize the importance to farmers of food security and survival systems and not just increased income. For poor families, the imperative must be to feed their families.

A second imperative, both for farmers and for the world, must be that farmers cultivate in a way that does not degrade the lands they farm, a factor recognized by the Focus Statement. It is a major challenge to AID and developing country governments to provide incentives for conservation for the millions of small farmers not usually affected by big governmental agricultural incentives or subsidy schemes and often only marginally touched by market forces. The Statement should reflect this need for conservation incentives.

In the Committee's view, the Focus Statement has still another shortcoming: it does not seem to reflect the importance of increasing farm productivity (not production) -- productivity which can and must be increased within sound environmental bounds if poor farmers are ever to improve their lives.

## AID'S FIELD OPERATIONS FOR SUSTAINABILITY: THE AGRICULTURAL PROJECT

Though policy making and review are important, they are nowhere nearly as relevant to increasing sustainable agricultural productivity as is what happens at the farm level. Many technologies for improving productivity already exist and more are being designed with every passing day. The Committee believes that AID missions are not taking near enough advantage of existing opportunities to foster the wider use of new technologies. Finding ways for their integration at the farm level is in no way easy. But the Committee is convinced that this is the arena in which AID, and the United States more generally, has special expertise, particularly as compared with other possible sources of help. And it is the area of agricultural development which, even though arguably the most important, has been most neglected -- and paradoxically increasingly so.

In fact the number of farmer-based, bottom-up experiences in successfully promoting farmer-approved means of increasing production and at the same time conserving natural resources is surprisingly large. Furthermore, they are designed for a remarkable number of ecological and cultural situations. Successful experiences originate from many sources: sometimes from local initiative based on replicating successes from other areas; sometimes from the initiatives of local organizations-- farm organizations, local or foreign PVOs or NGOs (the work of World Neighbors on marginal hill lands in Honduras comes to mind), and women's groups; and sometimes from the efforts of sensitive government extension workers. But even this encouraging number of successful interventions must be sharply increased and be made to encompass even more social and ecological situations. AID's aim should be to help in every country where it has agricultural programs with the confection of sustainability projects, that are of broad enough applicability to be widely acceptable in a large number of villages and which can be easily and cheaply adapted to site-specific requirements.

### AID AND AGRICULTURAL RESEARCH

A key element -- often the key element in discovering successful sustainability techniques -- is creative and imaginative research. Much of the technology (new plants and animals, new systems) in support of sustainability will be generated by the international agricultural research centers, some of the more progressive national research centers, and the better regional agriculture research centers, many of which AID has long supported financially and intellectually. The contributions of these institutions in support of food security

and natural resource protection will continue to be crucial, particularly in devising technology for farmers on the poorer lands bypassed by the first "green revolution." AID should make the support and improvement of the work of key agricultural research centers a matter of continuing high priority.

Admittedly, there have been weaknesses in the approach of some of the international and the national research centers. The Technical Advisory Group (TAC) of the Consultative Group for International Agricultural Research (CGIAR) has recognized the urgent need to put a much higher priority on establishing elements of sustainability in their research. TAC's committee on sustainability has helped move the centers in the right direction, and some of the centers are now paying laudable attention to sustainability, to a broader systems approach versus a commodity-by-commodity application, to better natural resource management, and to the problems of the small farmer on less well-endowed lands. Yet it is clear that such program shifts and additions will cost more money while it is not at all clear what programs the centers will give up to address these new areas if their financial support declines.

There is another continuing problem for some of the international and the national research centers. In the past, too much technology has been generated and tested on experiment stations and has not been tested over a long enough period by working farmers on their own farms and under realistic conditions of work and stress. The international centers all claim to be making a special effort in this regard. They also claim to be involving ordinary farmers in the formulation and implementation of research agendas. Some centers are obviously doing more along these lines than others. The Committee applauds their resolve, urges AID to urge them on, and is most anxious to support them in these efforts.

Where almost all the international centers still fail is in the difficult job of getting good farm-tested technology out to the farmers. Historically this has not been their job. They have been responsible largely for basic work in genetics and systems design, with adaptation of their results being left to national or regional research centers. From there, the job of getting results out to the farmers has been thought to be the task of national extension services and missions. But this presupposes that viable and sustainable national research and extension systems exist in each developing country. Too often in fact national research systems are not really viable and require strengthening. In most African countries, for example, both research and extension systems exist in name only. In countries where extension systems are too weak or non-existent, the Committee believes that the international centers have a special responsibility to work with development agencies and private organizations to find some practical way to get their technology

to the farmers and to some extent to help with local adaptation of their research results. The problems of achieving sustainability and food security are too urgent to postpone the introduction of proved and promising technology at the farm level until stronger research and extension systems come into being. Political leaders of governments which fund the international centers continue to ask what purpose is served by generating new technology if it doesn't get out to farmers. The international centers -- and AID -- neglect this problem at the peril of endangering future financing.

The Committee does not yet feel well enough informed to say much more about the centers' specific research agendas. The exception lies in its strong belief that the centers must better serve the urgent need in developing countries for viable, "farmer-friendly" integrated pest management (IPM) systems-- efforts that go beyond the centers' important work in breeding better pest resistant plants. Most of the centers should, in the Committee's view, give the development of whole IPM systems in all their aspects--(techniques of cultivation and physical reduction of pests as well as use of chemicals only as a last resort) higher priority. AID should use all its influence to this end, as well as mobilizing its resources much more urgently to promote IPM -- through other development agencies. The need is to go beyond narrow IPM research to the point of having systems workable for small farmers before pests overwhelm major crops. Also AID needs to spend much more time and effort on enforcing its own pesticide regulations, particularly as concerns use of dangerous pesticides in jointly financed projects. AID has started down these roads (IPM development, care for pesticide monitoring), but needs to put a lot more good people to these tasks.

Further to AID's role with the centers' research, financing, planning and management, the Committee recommends that AID increase -- not decrease -- its support for the centers. The Committee recommends that the Administration restore its request for funds for the international centers to the original 25 percent of budget and be ready to substantially increase the total United States contribution, as the centers' needs and their capacity to use more money effectively is documented.

Secondly, the Committee has the impression that AID's participation in the planning and implementation of the centers' research programs varies from intense to almost token. AID should be following with great care all the aspects of each center's work, from the implementation of their decision to pay much greater attention to sustainability to their efforts to get technology out to the farm level. AID must be ready to use its influence more actively and more often with the centers' management. To do this effectively, AID must have a sharper focus on exactly what it would like each center to accomplish and

must provide enough trained people to make this possible which is now not the case.

Turning to the national research centers, the Committee believes that AID's policies in regard to their support varies correctly from country to country depending on their proven capacity. In the long run most, if not all, developing countries will require some substantial and skilled agricultural research capacity. However, a good many countries at this stage have shown themselves to be incapable of financing and manning viable research facilities, or are not politically ready to spend the money to sustain them. In such cases, AID is right in not spending scarce funds, certainly for building infrastructure or for paying recurrent costs. Weak research and extension systems quite frankly provide a "catch-22" situation. Perhaps the best contribution the United States can make at this time is to continue to recruit and to train talented developing country agricultural researchers, and to ensure that this training is focused on sustainability, and to urge their proper utilization.

Where AID supports viable national and regional agricultural research centers, it should continue to use its leverage to ensure a bottom up approach to research (real farm trials, farmer involvement in setting research agenda, etc.) and attention to sustainability factors.

Another place where bottom up and sustainability factors would profit from increased attention is in the AID-financed collaborative research support programs (CRSPs) which draw American universities and experienced private research institutions into partnership with developing country institutions. The Committee strongly recommends that the multi-disciplinary approach to the environmental and natural resource disciplines, as well as sustainability in general, be placed right up front in terms of priority in the CRSPs.

The Committee agrees with the National Association of Land Grant Colleges and State Universities that AID could well seek new funds or reallocate old funds to create a new CRSP devoted specifically to helping developing nations focus on introducing all the techniques of agricultural sustainability into their agricultural development programs. This would be an exception to the "no sustainability projects per se" rule, desirable in this case for demonstration purposes.

The specialized scientific networks that AID supports must also give priority attention to natural resource problems and to overall sustainability. They must adopt a solid bottom-up farmer-oriented, participatory approach to research. Sometimes this is not yet the case, particularly where there is a commodity-by-commodity approach.

In fact, using United States influence towards these same objectives in every contact with developing country agricultural research and educational cadres is as important a goal as any. Fortunately, mobilizing intellectual influence is very often well done by AID and its academic partners. Unfortunately, the sustainability focus is still too often missing.

One contribution that AID could make with the international centers, the United States universities, other development agencies, and developing country collaborators would be to establish a computer accessed catalogue of sustainability techniques that are already producing results, particularly those that help to minimize environmental degradation. Such a listing, perhaps using some of the techniques developed by the FFRED network that AID is sponsoring for research on tree species, should indicate which techniques work, in which physical situations they apply (soil, water, ecosystem, degree of steepness, etc.), and how to fund them. Information about many successful experiences is not yet easily accessible. The aim of such a system should be to provide broad access to proven techniques for forestry, cropping, water management, energy, wetlands and socio-economic conditions -- but always focused on sustainability. Better information management will turn out to be one of the principal ways of expediting the transition to sustainability.

#### AID AND THE "CHANGE AGENT":

It's now time for AID to give much greater focus to efforts aimed at helping to develop successful "agents of change": people ready and able to dedicate themselves to the even more difficult and urgent task of helping farmers, farm organizations, development agencies, and developing country governments spread successful interventions to millions of small farmers in thousands of villages and then adapt them to local conditions. This difficult task is critical because too often developing country governments are opposed or disinterested in helping small farmers. Or, if helping them, they resist going as far as to help farmers organize themselves, thus possibly contributing to what they consider undesirable political empowerment of rural groups. This task is most often particularly difficult because few countries or development institutions, including AID (despite extensive experience in dealing with PVOs), are set up to organize or help organize and energize grassroot farm operations of this scope and detail.

For the Committee, finding answers to this central problem, even if only partial answers, must have a continuing high priority. The Committee is not proposing the establishment of formal new or competing extension systems where good ones already

exist. This would be financially and politically unrealistic. Rather the Committee recommends that AID help in putting together as best possible a series of ad-hoc, locally designed and supported extension systems that will meet the challenges of sustainability in places where effective extension systems do not already exist.

AID obviously does not have the money or people to address the problems of sustainability in all villages of any country or region. How then should this problem be approached? The Committee believes that AID should start by expending a lot more effort in identifying as many potential effective local organizations as it can find and then helping to build up their capacity to work with farmers. This is a task in which U.S. PVOs can help. The selection of local cooperating organizations which can effectively spread successful models to many villages is likely to be difficult, highly pragmatic, incomplete, somewhat messy, and certainly very site-specific. For the moment, AID must realistically look for much of this help from cooperating organizations -- and cooperating development agencies.

Of course solutions will be different in every country and region. In some countries, the governments, existing local organizations and other development agencies will willingly offer themselves as partners for this broader effort. In some countries, effective organizations (in Senegal, local farm networks; in Zambia, church groups) are already involved in agricultural development. In others, AID can work with groups as different as the United States Peace Corps, the Pan American Development Foundation, IFAD, the African Development Foundation, and the World Food Program to locate effective groups to help.

The World Bank perceives somewhat the same problem with extension. The best of its agricultural planners recognize the inability of many of the governments to which they loan money to reach their farmers with new technology. Where it chooses not to work directly with small farmers, the Bank can hopefully be a partner with AID in co-financing alternatives. Other development agencies can be partners and possibly even the source of funds. But the Committee is convinced that AID must take on the task of being the major energizing force for such an effort, seeking always to convince developing country governments and other agencies of the urgency of helping more farmers on a site-specific, farmer-oriented basis.

The distrust of aid-giving agencies by grass root organizations in developing countries may be a hurdle to overcome. The Committee believes that AID has, can, and will prove to be a loyal partner for the small farmer. But to prove this true, AID must recognize that some governments do not really want to help, much less strengthen, small farmers. AID has a

role to play in helping to reverse such attitudes, in persuading such governments to adopt a more benevolent and supportive policy towards farmers and their organizations. The Committee is convinced that U.S. support for rural equity, justice, and opportunity is just as essential to our national interest as is U.S. support for freedom and initiative in other aspects of economic life. The Committee believes strongly that if the United States and AID act wisely, our country can play a real role in helping to get broader recognition of the potential of the individual farmer. This power of the individual farmer is desperately needed by an increasingly hungry world.

Working through local organizations is not in line with the way development agencies have traditionally worked on extension, which has tended to center on top-down endowment of technical wisdom through government extension services. While government extension works well in some countries, top-down extension has been broadly criticized and a consensus is growing on the need to combine effective top-down technology with better bottom-up approaches. In more than a few countries, extension services have established good links with research organizations as well as friendly, cooperative relations with small farmers. But that situation is still too rare. Too many government extension services reach only the big and politically influential farmers. Too often government extension services lack sure sources of money to pay for travel, training and other recurring costs. In the long run such costs must be met by developing countries themselves, and cannot be paid by outside development agencies.

One of AID's biggest jobs at this phase of agricultural development must be to find or help others to find the right kind of "agents of change." Experience shows that great success often comes from betting on skillful local leaders rather than on "good" technology, and then providing these people -- very often women -- with incentives for good work. Such change agents could be commercial people in some cases. Whoever they are, they require proper technical backup and political support once they've proved their worth, plus continued and reliable help over a number of years. Giving them the right kind of technical input can also be crucial to the success of extension services. Backup must be simple, inexpensive, and built upon farmer experience. It must be easily available and capable of being disseminated by modern communications techniques (flow charts, slide shows, rapid education, etc.).

Some of the best extension agents are highly-regarded local farmers -- again, often women -- chosen by villagers and paid by them. Such persons can skillfully build on existing farm practices and local attitudes. AID, working with PVOs or local organizations, has occasionally initiated such arrangements. This could well become a more widely adopted model. But the key requirement is to give farmers a sense of ownership of and identification with the sustainable practices introduced.

AID'S WORK WITH PVOS

Two years ago there was more of a tendency to look to the U.S. PVOs, either acting directly or as a subcontractor to local organizations, to take on the major part of the burden of reaching the small farmer in developing countries. Since then PVOs have often pointed out that their spreading out to the extent implied by this thesis was unrealistic and probably not in their own, the U.S.', or the developing countries' interests. PVOs quite correctly are careful about extending their operations, particularly if this could mean acceptance of too many official funds and overexposure in the countries where they work.

On the other hand, the Committee, like the PVOs, is convinced that U.S. PVOs, particularly those long involved in agricultural development, have a larger role to play in the transition to agricultural sustainability. Their experience, their contacts with local organizations, their sensitivity to farmers and their problems, their ability to work with farmers on a small scale, their acceptability to farmers and, where well established, to government officials -- all these are precious qualities. The Committee urges AID to give PVOs and local organizations through which they work the strongest possible support with developing country governments. These governments should be urged to look on PVOs and NGOs, local and international, with a kinder eye where they do not already do so. The Committee knows that AID is already giving this kind of support to PVOs in some countries and encourages them to expand such efforts.

As a central point, given the fact that AID may well be depending increasingly on PVOs, U.S. and indigenous, the Committee believes that AID should continue to reassess and rationalize its methods for working with them. The Committee urges that AID identify and remedy constraints that make it difficult for PVOs to use their funds efficiently. Every effort should be made to be more flexible, more encouraging, and less bureaucratic. For example, matching fund requirements should be relaxed for AID-PVO cooperative activities involving agriculture and forestry just as AID has done with child survival programs. All this may require changes in Congressionally mandated requirements, and the Committee is prepared to help.

AID should make a careful survey of success stories in the use of PVOs in achieving sustainability and examine how it can help give the better indigenous PVOs the financial stability which will attract and keep people with expertise and experience. The Committee recognizes that PVOs will often have problems in absorption, in working together, in finding the right ratio of technical to management staff, and in adapting their experience in agricultural sustainability from one region to another.

However, the Committee sees big gains from closer, if still discreet, partnerships between AID and PVOs in all these regards.

#### INSTITUTIONALIZATION OF SUSTAINABLE AGRICULTURE WITHIN AID

Experienced AID observers all agree on one thing -- in a process-driven agency like AID, the way to ensure that a principle like sustainability moves rapidly toward effective incorporation into its programs is to institutionalize it. This entails the adoption of the vocabulary of sustainability as part of standard AID terminology; the adoption of processes that require the introduction of sustainability concepts into all programs and projects; the testing of programs and projects to determine when and how sustainability is being achieved; and the recruitment, promotion, and assignment of people skilled in sustainability to jobs in training, policy formulation, planning (at individual missions, as well as central planning) budgeting, project review and evaluation, planning and coordination with other development agencies, and policy and technical discussions with developing countries.

Most of AID's younger generation of agricultural, natural resource, and environmental experts -- now in the majority -- believe in the centrality of good natural resource management and careful environmental stewardship. The trouble is that AID is losing too many of its few field-based agricultural and natural resource experts who are needed to plan, implement and evaluate the kinds of projects the Committee has described. Their expertise is vital to the success of projects: to inform and motivate developing country counterparts; to monitor U.S. and other agricultural and natural resource projects and programs; and to seek, evaluate and disseminate news about the successes and failures of sustainable agriculture. Without trying to quantify exactly how many such experts should be stationed in Washington or at a given mission, the Committee believes that every Washington bureau and every mission with a serious agricultural-natural resources program (and with limited exceptions that should include all bureaus and missions) should have "resident" experts in one or more of the disciplines related to sustainability. This would be in addition to people more broadly responsible for agricultural programs, who must also become advocates of, if not specialists in, agricultural sustainability. AID should also make special efforts to recruit people who understand and sympathize with the participatory approach, such as ex-Peace Corps people.

The Committee strongly urges that mission directors and, in fact, all AID personnel be judged for promotion in part on their ability to understand and support sustainability in agricultural projects. AID should ensure that it assigns able officers to see

such programs through to a successful conclusion, not just to design elegant projects and get them underway. Long-term commitment to seeing projects through mistakes and mid-course corrections to success, even if it takes a decade or more, is essential. More imagination should be used in finding innovative ways to keep personnel involved in key projects over a longer period, even after they are no longer serving in the country where the project is located.

The Committee also urges more -- and more intense -- training of AID personnel at all levels in the concept and practice of agricultural sustainability. Such training should increasingly be extended in an appropriate form to all senior officers in executive positions and quite specifically to program officers. The Committee urges AID to assign a few select people for longer periods of study of agricultural sustainability in the universities and at successful project sites.

AID should also continue to hold or sponsor interregional sustainability workshops in Washington. These workshops should include people from all regions, all bureaus, Congressional aides, PVO and NGO representatives, and outside experts. These efforts should aim at narrowing the isolation of its people from the new currents of agricultural thought and experience. The Committee also urges AID to sponsor a growing number of regional workshops on techniques for achieving sustainability for farmers on fragile lands.

The Committee recognizes that to carry out its agricultural programs AID will have, for the immediate future at least, to rely heavily and increasingly on outside experts from a few excellent agricultural development institutions, like Rodale and Winrock; on freestanding groups of consultants; and on experts from the U.S. academic community. We urge discriminating emphasis in selection of these experts on the basis of their personal experience and performance and not on their institutional affiliation. We also urge a careful review of the criteria for selecting "Indefinite Quantity Contracts" (IQCs) to ensure that agriculture consultants so chosen are truly qualified in the principles of sustainability.

#### AID LEADERSHIP IN PROMOTING AGRICULTURAL SUSTAINABILITY WITH DEVELOPING COUNTRIES AND OTHER DEVELOPMENT AGENCIES

The Committee recognizes the difficulty AID will have persuading other providers of economic assistance to fundamentally change their agricultural development programs or to undertake programs and projects to which they may not be politically, institutionally, or intellectually committed. However, agricultural sustainability and natural resource

protection are themes whose time has come, and AID should be a willing missionary on their behalf. Broad discussions on sustainability with other agencies are long overdue. Some of the more advanced developing countries have very important contributions to make in this regard, and there should be regular exchanges of information and views with and among development agencies. AID should also in this period of budget austerity do more to interest other development agencies in financing projects or otherwise helping to spread sustainability solutions.

The Committee further recommends that AID urge the OECD's Development Assistance Committee (DAC) to hold special sessions dedicated to sustainability.

AID, in reviewing World Bank and regional bank projects as required by Congress, should give special emphasis to those institutions' performance on sustainability.

AID, in conjunction with the National Academy of Sciences, is now committed to producing state-of-the-art report on experiences in finding successful techniques for advancing agricultural sustainability as well as ways in implementing them. The Committee urges AID to give this project its whole-hearted support. Incorporating PVO experience will be particularly important.

#### AID AND THE COMMITTEE

Finally, a word about relations between AID and the Committee. This relationship, as seen from the Committee's viewpoint, has been a positive and constructive one. The Committee has often criticized or praised one aspect or another of AID's performance. It has had quite pointed discussions with AID officials on matters to which it attaches special importance. Overall this has been a supportive relationship and certainly one of mutual respect. From the Committee's side at least, this is because it believes so strongly in the importance of AID and its basic mission, as well as in the special value of AID's field-oriented operations. AID officers share the same basic values as Committee members. The Committee believes that AID has one of the most talented and experienced cadres of development professionals in the world.

#### AID AND THE FUTURE

However, as this Agenda has attempted to show, the Committee believes that AID, as it is now organized, operated and motivated, is in a minimalist mood. Without real change and

without a sense of renewal, AID will be hard pressed to make the needed contribution to the urgent tasks here outlined. These challenges can be summarized in this way:

- AID needs, in agriculture as in other fields, above all to project a more urgent sense of mission -- not the least towards the problems of hunger, food security and natural resource protection. It must insist on making the achievement of sustainability a part of its mainstream thought and actions.
- AID needs to aggressively compete for the funds and the skilled people that it needs to do the job that our times demand -- in agriculture, in family planning, in natural resource protection, and in combatting global warming. This effort must necessarily have strong support from the White House and the Office of Management and Budget.

All this adds up to the need, just as the Hamilton-Gilman panel suggested, for AID's leaders to take a new look at the urgency of their basic mission in light of the rapidly and dangerously changing conditions in the Third World. Major internal shifts in AID will be required. The additional resources needed from Congress will be relatively small in comparison with the huge amounts spent on other aspects of defending our national interests -- and compared with the costs to the world if natural resource systems become irretrievably degraded and agricultural sustainability is not achieved.

AID and the Congress must also be ready to accept the risk of failures or of only partial successes in U.S. efforts to help the poor majority of farmers achieve sustainability. Far from every effort will succeed. Our country must, above all, be ready for a new hundred years' war on poverty and hunger, a war in which far from all battles will be won. The Committee is convinced that AID can make the kind of transformation suggested here.

More broadly, AID and the Bush Administration must quickly take the lead, along with the Congress, in building a new national consensus in support of the right kind of development assistance. This consensus can and should be based not just on this country's deep humanitarian motives towards the poor of the world. Nor should it be based primarily in fostering export opportunities. It must fundamentally be based on a recognition of our strong national interest in creating a new balance between man and nature. This is real sustainability. This Committee stands ready to help in the building of such a consensus.

ANNEX 1: AGRICULTURAL SUSTAINABILITY DEFINED

The Committee's considers sustainability in agriculture to be a dynamic concept, defined as the ability of an agricultural system to meet evolving human needs without destroying and where possible improving the natural resource base on which meeting these needs depends.

Frankly, the Committee has not worried too much about definitions of sustainability at this broad conceptual level or about small differences between the above definition and many other useful definitions of sustainability. The Committee recognizes other definitions as valid if they emphasize the dynamic nature of sustainability (what is sustainable in one period may not be sustainable at a later time or in other circumstances); the need for agricultural interventions to meet the evolving needs of the farmer and give farmers early returns for their efforts; and the need to protect the farmer's resource base of water, soil, vegetative cover, and fauna. The Committee thinks of the function of sustainability as being the means of assuring the health of farms and farming systems over a long period.

The broad conceptual definition of agricultural sustainability, such as the one above, is useful for at least two purposes: it provides a framework for multi-faceted, multi-disciplinary, and thus more rigorous examination of agricultural development and development in general. Just as important, it provides political leaders with a powerful answer to the question of whether money spent on development will have lasting results and is thus worthwhile spending as compared with using the same money for other needed programs, domestic or foreign.

In the last two years, the Committee's attention has gone beyond the broad concept of sustainability, to put greater emphasis on a farm-level, operational definition: agricultural projects and programs, to be sustainable, must be site-specifically analyzed to provide for the very different physical and social conditions under which they must operate.

It is true that the Committee tends to pay special attention to the environmental, ecological and biological requirements for achieving sustainability, and especially to the necessity for proper management of soil, water, and vegetative cover. The Committee also pays special attention to the need for all agricultural development to be based on the aspirations and limitations of farmers and on their own perceptions of opportunity and risk.

If the Committee tends to pay special attention to these dimensions, however, it is because they have been neglected and not because they are the only important aspects of agricultural

sustainability. Indeed there are equally important agronomic, economic, institutional and political aspects of sustainability and it is seldom worthwhile to spend much time debating the relative importance of these various facets. They all must be served and come together in a systematic way.

The Committee also recognizes that while there are very important dimensions of sustainability which apply directly to the farmer, the farm family, and farmers' organizations, there are others which apply to the off-farm world of trade and politics. Taking full account of farmers' desires and limitations must be the solid foundation on which agricultural development and research are built. However, farmers' capabilities -- even those of well-organized farmers -- extend just so far, and development agencies like AID must -- and do -- pay attention to government policies and practices. The art lies in choosing which factors in any given situation are the most important and/or the most susceptible to change for the better, due recognition being given to the comparative advantage of AID and/or other outside organizations which are ready to enter into cooperative efforts.

ANNEX 2: A CHECKLIST OF SUSTAINABLE AGRICULTURAL PRACTICES THAT THE COMMITTEE URGES DEVELOPMENT AGENCIES TO INCORPORATE INTO AGRICULTURAL AND RURAL DEVELOPMENT PROJECTS

1). Systems that provide farm families with cash income and incentives for conservation.

2). Systems that maintain and improve soil fertility, quality and structure.

3). Systems that augment the potential for achieving the highest possible efficiency and tradeoffs in use and conservation of basic farm resources (soil, water, sunlight, energy, planting material, and farmers' capital and time).

4). Systems that integrate as much biological interaction as possible: for example, mulching, the use of nitrogen fixing plants, the use of agroforestry techniques, the use of inter-cropping and crop rotations, use of contour and alley farming, etc.

5). Systems that minimize and help phase out the use of and need for health endangering, expensive and/or environmentally damaging off-farm inputs<sup>4</sup> and, instead, encourage the efficient use of on-farm inputs such as animal manures, compost and plant nutrients such as green manure; and reliance on the natural enemies of pests. Of particular concern are pesticides (insecticides, fungicides, and herbicides) that destroy non-target organisms and that are environmentally mobile, or toxic to humans and animals.

6). Systems that move towards crop diversity, away from monocropping and dependence on the culture of a single product or a single species.

7). Systems that avoid the overuse and contamination of surface and groundwater.

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<sup>4</sup>In many situations some use of external inputs is necessary and justifiable, but the Committee is concerned about the development of unsustainable dependence on off-farm inputs--unsustainable because of the likelihood of rising costs of petroleum and petroleum-based products (such as some fertilizers and pesticides) and declining returns, unsustainable because of environmental impacts (contamination of water tables, development of weed and pest resistance, loss of soil quality, etc.). The Committee urges maximizing the use of available, affordable, renewable and environmentally benign inputs and supports giving the highest research and development priority to the progressive attainment of the goal of minimizing off-farm inputs.

8). Systems that meet the needs of farm families for energy to work their land, cook, and heat. Such energy must be readily available, affordable, and whenever possible renewable energy sources, account being taken of the contribution to global warming of coal and fuel wood burning for farm energy. For this and other reasons the Committee emphasizes the need in rural areas to plant more biomass than is being harvested for combined urban-rural use.

9). Mixed farming systems that incorporate animals (cattle, small ruminants, chickens, rabbits, fish, and other animals). The importance of using and properly managing animals as a source of food for farm families, for fertilizer, and for farm energy cannot be overemphasized. By good management the Committee refers especially to controlled grazing of cattle in watersheds and the introduction of stall feeding, despite the resulting labor demands for gathering forage. Better on-farm management of animal manure to minimize unnecessary methane generation must also be increasingly sought, again despite labor constraints.

10). Systems that strive towards using water more efficiently in irrigation.

11). Systems that incorporate a sensitivity to the importance of preserving as wide a genetic base as possible in crops and animals, and that preserve -- on farm and in surrounding natural areas -- the widest possible species diversity.

12). Systems that, even as society evolves and communities change, will protect the rights of indigenous groups, will strengthen community cooperation, and will make possible effective local management of community-controlled common property resources (ponds, woodlots, grazing lands, irrigation systems) in ways that permit equitable community control of and sharing in benefits.

13). Systems that will reduce farmer risk and, through community support and sharing, allow farm families to keep going in difficult times (famine, drought, and natural or political disasters).

14). Systems that allow farmers to acquire title to their land; that respect access to badly needed common property (communal woods, ponds, irrigation systems, grazing areas); or, where communal property is customary, that give farmers an adequate sense of tenurial security.

The Committee does not mean in any way to neglect -- or to exclude from its concept of sustainability -- other important national and international parameters. It recognizes that a number of off-farm factors are crucial, in the long run and often

even in the short run, to farmer prosperity and to farming sustainability:

15). The willingness of research organizations, economic development agencies, banks, and developing country governments and institutions to accommodate the continuing evolution of the concepts and practices of sustainability and to provide long term commitment to their achievement.

16). The growing need to persuade the governments in some developing countries to change their policies and programs to provide encouragement and incentives for the adoption of sustainable agricultural systems. Governments must reconsider discriminatory tax policies, agricultural subsidies, agricultural price controls, land holding policies and practices, food pricing policies, and transport policies -- in fact any aspect of government policy that puts farmers, particularly poor farmers, at a disadvantage. Farmers and the farm sector must not only receive their fair share of natural wealth and attention, but also be offered incentives for conservation.

17). Equitable access to rural economic infrastructure, to credit and to necessary inputs such as irrigation water. These must be available to the poor farmers as well as more prosperous farmers on a continuing, fair, nondiscriminatory basis.

18). Fair access to social infrastructure -- schools, facilities for health care, family planning, nutritional advice, etc.

19). National and international access to markets where farmers can sell their produce at a price which will cover their costs and give a fair return.

ANNEX 3: ELEMENTS FOR SUSTAINABILITY TO BE INCLUDED IN AGRICULTURAL DEVELOPMENT PROGRAMS

SOIL: Techniques Which Conserve and Improve Soils

Soil science is an area of special American expertise. AID has been relatively strong in soil research and soil mapping. It has been weaker in soil management and soil conservation, despite some notable success in these regards. In the Committee's view, not enough has been done to introduce simple, cheap soil conservation techniques into AID agricultural projects. Heavy emphasis should be put upon soil management and related agronomic and cultural practices. These could, where appropriate, include:

- Protection against water erosion: planting ground cover; tree planting along terraces; bench terracing; bunds on steep areas; check dams; infiltration ditches; terrace construction; gully plugs; low dams; stone and trash lines; minimum till; and alley cropping.
- Protection against wind erosion: dune stabilization by palisade construction and tree planting; planting trees for windbreaks; and planting of ground cover.
- Restoration and maintenance of soil fertility: use of mulching; crop residues; animal and "green" manure; dispersed farm tree planting and other agroforestry practices; methods to increase organic content of soil, particularly in arid and semi-arid zones; use of farm wastes and "pure" sludge as soil amendments; and the use, where appropriate and possible, of cheap, locally provided, efficient mineral fertilizers, particularly as sources of phosphorus and minor elements.
- Restoration of abandoned lands, as difficult and expensive as this may be.

Almost all soil preservation and restoration projects involve substantial investment of money and time. Some are relatively cheap (trash lines) and some expensive (terracing). Outside financing of expensive techniques is very often necessary. However, this should not be undertaken unless farmers are genuinely convinced that such projects are in their vital interest. Farmers must be willing to invest their own time and even some funds in the construction and maintenance of soil conservation structure.

IMPROVED PLANT MATERIAL:

Efforts must be reinforced, among other things, to produce through research and development plants better able (a) to increase productivity; (b) to reduce plant stress, particularly in difficult environments (low rainfall, steep slopes, poor soils, etc.); (c) to augment soil fertility; (d) to reduce the need for outside inputs for pest and weed control; and (e) to produce higher income or otherwise improve the quality of rural life (better nutrition, sources of cash income to purchase essential external inputs, basic goods not produced on the farm, and amenities). Farmers should be encouraged to only grow crops for which local, regional, and world pricing prospects are good and particularly to avoid planting crops which are already in surplus production, a common error of some development agencies.

IMPROVED CROPPING TECHNIQUES:

- Techniques that enhance productivity through better crop spacing, better timing of planting, intercropping, crop rotation, and use of biologically interacting plants for weed control.
- Low tillage which will conserve soil and water.
- Techniques for relay cropping, polycultures, crop rotation.
- Agroforestry combinations, including forest and home gardens, both for the difficult arid areas and for moist tropical forest situations, in both of which on-farm production can also provide wood, forage, fruits, medicines, and other products.

PESTICIDE MANAGEMENT AND INTEGRATED PEST MANAGEMENT TECHNIQUES:

Integrated pest management (IPM) techniques already exist for some crops and may be capable of being introduced into new areas with minimal local adaptation. Given the rapid spread of resistance by major pests to pesticides and given the potential for harm from the misuse and overuse of chemical pesticides (water table pollution, food contamination, rejection of pesticide-contaminated food exports, farm worker sickness from exposure to pesticides), every effort should be made to develop, utilize, adapt, and extend IPM and to give it a high priority in research programs. Implementation of IPM research has been too slow and, in the Committee's view, underfunded.

AID has good pesticide regulations but sometimes is not careful enough about their implementation. AID programs in this area should include:

- Policy dialogue with host country governments to reduce economic and regulatory disincentives to IPM and promote improved pesticide legislation and implementation of regulatory policies regarding the import, production, distribution, handling, safe use, storage, and disposal of pesticides.
- Development of IPM techniques within an interdisciplinary and agro-ecosystem perspective.
- A greater emphasis on exploring opportunities for the biological control of pests.
- Cooperative programs to help farmers learn to identify insect pests and beneficial species, calculate economic thresholds, handle and apply pesticide safely, and minimize their use.
- Cooperative programs with other development agencies to regulate the provision of pesticides for development programs that are potentially hazardous to humans and/or the environment; and to insure that IPM programs are developed in cases where it is determined that pesticides will be needed.

WATER MANAGEMENT: (1) Low cost techniques for better supply and conservation of water and for improved and locally controlled water management at the village level; (2) better management of modern irrigation systems.

- Construction or improvement of small scale irrigation systems including traditional irrigation systems.
- Formation and management of irrigation users associations.
- Training for irrigation technicians and farmers in better operation of irrigation systems and in the use of methods which prevent salinization, waterlogging, and, where possible, water-borne diseases.
- Technical and organizational help in establishing mechanisms for watershed management and runoff control on or above village lands.
- Dry land techniques for water conservation: field grid systems, water spreading, water channelling, and water harvesting (infiltration) systems, etc. In many areas there is great potential for significant returns from water conservation at a low cost, and this work should have higher priority.

- Water storage and conservation methods.

ENERGY: Project components and techniques which meet needs for energy at the farm or village level, preferably from renewable energy sources for reduction of the burden of farm work; and for heating, through mechanization; renewable energy for heating, cooking, and pumping.

The Committee notes growing concern about the contribution of the use of wood biogas to global warming unless more trees are planted than are harvested. It urges early AID-supported research on how rural families can contribute to the avoidance of global warming through more intensive planting of trees and bushes. For the immediate future, most people in the developing world have little choice but to use wood and manure. Also, in the not too distant future, alternatives may have to be found for those farm energy needs now provided for by fossil fuels. It's not too early for development agencies to start building considerations dictated by both these problems into their programs.

- Introduction of draft animals (absence of good, cheap or readily available animal fodder is often the chief constraint).
- Home and village tree planting for fuel wood, particularly if combined with watershed preservation, provided broader objectives for countering global warming are observed.
- Introduction of biogas digesters (which also supply a nutrient rich slurry), bicycle power, etc.
- More efficient use of biomass fuels through better stoves, improved techniques for the production of charcoal, etc.
- Solar energy for crop drying and preservation, etc.

FORESTS, WETLANDS, COASTAL SYSTEMS, AND GRASSLANDS: Techniques that provide for the protection of biological diversity in the sustainable use and protection of village-exploited forests, aquatic systems, and grasslands, as well as more distant forests, aquatic systems, and grasslands which impact the sustainability of farms.

- Improved management of natural forests with a view towards sustainable regeneration, and equitable distribution of forest benefits.

- Improved management of wetlands and coastal systems as a natural means of water purification, sediment control, and wildlife management.
- Development of environmentally sound aquaculture projects and local fisheries, particularly as a supplemental source of farm income and better nutrition.
- Rangeland rehabilitation and better communal management of range lands (development agencies should continue some practical experimentation to find more sustainable range management systems, despite some failures to date). Programs should emphasize the establishment of policies and improved management systems that match existing soil, vegetation, and water resources to fit in with the cultural practices of the herdsmen concerned.

RURAL INFRASTRUCTURE: Techniques which make possible more efficient and equitable village-level support of agricultural production, storage, processing, and commercialization.

- Design and construction of farm or village level crop storage areas which cut unacceptable losses to insects, vermin and mould and permit marketing at a time of higher prices.
- More efficient and locally controlled marketing systems relying on up-to-date marketing information, bulk storage, and adequate and timely transportation.
- Local solutions to help meet the need for more cash at the time of purchase of seeds and other inputs, in part through the establishment of a credit system fair to producers, input supply and marketing cooperatives, food processing small enterprises, etc.
- Locally controlled and equitable credit systems with easily accessible and low interest credit guaranteed by groups as much for women farmers as for men farmers. Too many top-down farm credit systems have proven to be unsustainable because of high cost, difficulty of financial control and repayment, and unwelcome intervention of governments and politicians. On the other hand, subsidized credit to prosperous farmers can result in the overuse of pumped water, fertilizers and pesticides.