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AGRICULTURAL RESEARCH AND EXTENSION IN AID'S ANE BUREAU

**Remarks by Charles H. Antholt at the University of
Minnesota's Agriculture Research Policy Seminar.**

April 23, 1986*

I appreciate the opportunity to share with you today the perspective of an AID officer on agricultural research and extension in developing countries. I particularly want to thank Dr. Ruttan for this opportunity to meet with you.

I am also a representative of AID's Asia Near East Bureau (ANE). My remarks are made in that context. While I think I have a fairly global perspective, most of my professional experience has been in the countries of Asia and the Near East.

What I would like to leave with you today is my understanding of:

- o AID's general approach in the ANE region with respect to support for agricultural research and extension in developing countries;

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- o An overview of AID's current portfolio of research and extension programs and projects in the ANE Bureau; and
- o some general lessons based upon our experience with research and extension programs in the developing region.

As many of you know, AID has a long history of supporting development of national agricultural research and extension systems in the Third World and in particular in the ANE region. AID has for many years regarded the generation and transfer of new technologies to farmers as critical to agricultural development. AID's earlier efforts emphasized the transfer aspect. In the 1950s and 1960s we tended to put relatively more emphasis on extension. The underlying idea being that 'we have the knowledge we need to teach the farmers.' Work by Ted Schultz, Ruttan and the experience of the Agency in the field changed that. Indeed, since the early 1970s AID has accepted an internalized the notion of high return to investments in agricultural research vis-a-vis agricultural extension. The underlying premise being that while farmers may not read or write--they can count. And so, we shifted our emphasis to support the development of technology that was right from the farmers perspective. Consequently, we have given investments in agricultural research high priority and, some would say, neglected extension, at least extension in the more classical "county agent" mode.

AID supports the development of new technology through a number of mechanisms, including bilateral projects in individual countries, regional projects, and worldwide projects. In addition, we are particularly proud of our sustained, and significant level of support to the International Agricultural Research Centers.

Let me now turn and review briefly what we are doing in the countries covered by the Asia Near East Bureau of A.I.D. AID's Asia Near East Bureau covers 25 countries extending for the purposes of this discussion from Portugal to Fiji. AID is supporting major bilateral agricultural research projects in 15 of these countries, including Bangladesh, Burma, India, Indonesia, Nepal, Pakistan, Portugal, the Philippines, Sri Lanka, Thailand, Jordan, Morocco, Tunisia, Yemen and Egypt in the Near East. In addition, AID supports three regional research projects, one in the Near East involving Egypt and Israel, one in the South Pacific (11 island nations), and one involving the ASEAN countries. Within the region, AID is also providing core funding to several of the CGIAR Agricultural Research Centers, including IRRI in the Philippines, ICRISAT in India, ICARDA in Syria, in addition to support for associate centers such as IIMI, AVRDC and ICLARM. These activities are also complemented by a number of centrally funded AID projects managed by the Science and Technology Bureau, including seven Collaborative Research Support Programs, and projects involving research in such areas as aquaculture, biotechnology, soils, pest control, farming systems, water management and so on.

The amount of AID money involved in these efforts is considerable. Life of project funding just for ANE Bureau bilateral and regional projects totals about \$385 million, or about 12 percent of the Bureau's ARD portfolio. Most of the assistance is in the form of grants.

AID support for agricultural extension in the ANE region contrasts sharply with that for research. There is not a single bilateral or regional project devoted exclusively or even primarily to extension. To the extent that extension is addressed, it is addressed jointly with research, mostly within a farming systems context. This is no accident and reflects a

longstanding view, grounded on years of experience by AID agricultural professionals that formal, public extension systems have failed to deliver the goods, and given the scarcity of resources, higher returns were to be gained from investments in research. I will return to this later.

Let me turn now to an important question: What have we learned about development of national agricultural research and extension systems in developing countries? There is no disagreement within the development community that a continuous stream of improved agricultural technology is necessary for increased yields, crop diversification, and expanded rural employment. Nor is there disagreement that without new technologies for marginal lands, fragile topographies, and problem soils, stable agricultural production is not possible. It is also clear that technology cannot be generated in one environment and then be exported and extended successfully to farmers without at the minimum capacity to identify, try out, and adapt new ideas to the environments in which they are to be used. In this context a strong National Agricultural Research System (NARS) is considered essential, indeed a prerequisite for development.

In the ANE Region there are four basic components of NARS that we interact with as a donor: Agricultural Research Council, Ministries of Agriculture (MOA), agricultural universities, and more recently, the private sector.

ICAR in India, PCARRD in the Philippines, PARC in Pakistan, and BARC in Bangladesh, are some of the national councils that seek to coordinate research by setting priorities, approving research agendas and projects, and funding projects. Research councils also usually seek to coordinate cooperative work with IARCS and other technology generating institutions as well as

with bilateral donors. We have assisted with the establishment of many of these councils over the last 15 years or more.

MOA generally have overall responsibilities for experiment stations needed for adaptive research trials and also supports the national extension staff. It is with the MOAs that A.I.D. principally interfaces with in ANE country programs.

Agricultural universities are often involved in technology generation and maintenance research. But their most important function in our region is to turn out the young scientists--the human capital--to maintain and run the whole system. A.I.D. in the past has put considerable emphasis on the development of agricultural universities stressing the importance of integrating the teaching, research and extension functions. In our more recent history, however, we have not been as heavily involved in supporting the development of agricultural universities as we were in the past decades. Personally, I believe this is a strategic error.

Recently, private sector research has become relatively more important, especially in the agricultural input and biotech fields. Gargill in Pakistan, Adams in Thailand, Pioneer in India, are notable examples. As in the U.S. we see the private sector becoming increasingly important in solving many of the challenges of LDC agriculture. It is not clear, however, how we as a donor can most effectively support enhancing the capacity of the private sector to effectively engage in agricultural research.

There has been an impressive increase in ANE country capacity to address agricultural research problems. Indeed compared to Africa most NARS in ANE are relatively mature. Buildings, experimental areas, trained scientists, equipment, new

varieties and practices released are just some of the indicators. I am particularly pleased to note that today many are partners with the IARC's, taking the germplasm and other technologies and adapting these technologies to their own needs.

But the job is not done. Let me turn to some major questions facing NARS:

- o How to promote "excellence" and "research entrepreneurship" in NARS?
- o How can national research councils enhance the quality and pace of science as applied to agricultural problems?
- o How can the management of agricultural research systems be energized, made more efficient and effective?
- o How can the political and bureaucratic support be developed so that there is sustained and adequate budgetary support for agricultural research?
- o How to more effectively link into the "the fast changing world" of science and technology?
- o Will the next generation of scientist be prepared to assume their responsibilities?
- o How to get beyond wheat and rice in NARS programs? Or, how can NARS keep apace with the changing structure of demand?

The answers to these questions are too important to be left to donors. Maybe we can help. To the extent we can, we should. But the developing countries themselves have to first ask, and then answer these questions in their own terms.

I would like to highlight one other aspect of ANE's support for agriculture research, and that is the continuing effort of our Missions to increase cooperation between the appropriate IARCs and NARS. An example of the value Mission staff place on the IARC's was highlighted recently when the Missions were asked to "score" all forms of A.I.D.'s centrally funded ARD activities. These included the Cooperative Research Support Program with U.S. Universities, the centrally funded discipline projects, e.g., IPM, Biotech, NIFTAL, etc., and the IARCs. Collectively the missions overwhelmingly ranked the IARCs as being the most important, centrally funded expenditure of Agency resources for agriculture.

What have we learned on the extension side? Let me start with an historical overview. I think it is important to note that A.I.D.'s views toward and support for public extension have changed radically over the past four decades. During the 1950's and early 1960's AID and its predecessor agencies made substantial efforts to establish, expand, and support public extension institutions. This included placing large numbers of U.S. extension agents on AID's payroll overseas. By the 1970's, AID had greatly reduced its extension development support. What remained was associated with applied research projects or with geographically focussed integrated rural or agricultural development projects.

Why did AID back away from agricultural extension? The short answer is that the extension systems we found ourselves supporting, which we often helped create, were ineffective, inefficient, and irrelevant. Too often they were simply not appropriate to the social, economic, and cultural conditions prevailing in developing countries. Most importantly these efforts assumed an appropriate technological base that simply wasn't there. We found most extension services:

- o to be overly centralized;
- o to have limited contacts with farmers, researchers, and private industry;
- o to have urban born, poorly trained, extension agents, often burdened by regulatory and other non-extension responsibilities;
- o to have ignored the importance and role of women in agriculture;
- o to rely on ineffective and outmoded methods; and, most important
- o to have little or no effect on agricultural production.

In my view, the single most important factor explaining the failure of these early extension efforts was the lack of improved technologies to extend. Development thinkers of the 1950's mistakenly believed that Western agricultural technologies would work equally well in developing countries and that the problem was simply one of teaching peasant farmers how to use these technologies. While probably no one in the development business is so naive today, there is still a tendency for public extension agencies to attempt to extend inappropriate technologies, only this time technologies originating in the developing countries themselves. On the other hand, where improved and profitable technologies have been available, such as for wheat in the Indian Punjab, farmers needed little extension support to convince them to adopt and adapt rapidly. This same kind of experience has been repeated over and over again in the region. Casava in Thailand, rice in Indonesia and Sri Lanka, or more recently, popular trees in

Pakistan's Punjab, shallow tubewells in Bangladesh, are just a few examples.

During the 1970's and into the 1980's if A.I.D. did support extension, it was usually found within larger projects. Many of these activities were experimental and sought to overcome the deficiencies of earlier efforts. For example, extension was added to farming systems research in order to improve communications between researchers, extension agents, and farmers. Some projects also experimented with mass communications techniques to improve the effectiveness and efficiency of public extension systems. Other projects experimented with private sector approaches to extension.

As extension faded as an AID priority, it gained at the World Bank. The Training and Visit (T and V) approach arrived on the scene in the mid-1970's, and the Bank made large loans to many countries willing to attempt to improve their national public extension systems using the T and V approach. While we have not changed our view as to the relative priority of research versus extension, this has further reinforced our decision to concentrate our resources on research.

What can we conclude about A.I.D.'s and the World Bank's experience with extension programs in the 1970's and 1980's? First, no clear direction or strategy for extension has emerged. Each of the experimental approaches tried addresses only a partial set of the problems affecting the effectiveness, efficiency, and relevance of the extension function. For example, mass communication approaches can make extension more cost effective but cannot wholly replace an extension agent as a source of information, particularly with respect to feedback into the research system. Encouraging more private sector participation in technology transfer can be very beneficial.

but the farmers reached tend to be the better off producers who sell a large amount of what they produce and buy considerable inputs. The T and V approach, which is intended to address the problems of national public extension systems, has the advantages of limiting the scope of the extension agent's responsibilities while improving his status, mobility, and knowledge base, but suffers from being excessively top-down and rigid and does nothing about the quality of the extended technology or the type of individuals employed in the extension service. Because it relies mainly on the extension agent as the medium for information transfer, the T and V system is expensive particularly with respect to scarce manpower. It seems to work best when farmer knowledge is the weak link in an otherwise functional system. This is seldom the case, however. The farming systems (FS) approach to research and extension has gained many supporters in the past few years and may offer real possibilities for making both the research and extension systems more responsive to small farmers. On the other hand, this approach too may also be too expensive to replicate widely. My own view is that FS's most important contribution is legitimatizing actual on-farm and personal contact with farmers for LDC scientists. There are many cultural biases against this. FS, in part, breaks some of these cultural barriers down.

I think it is fair to say an important conclusion is that the key constraint holding back growth in agricultural productivity is rarely the lack of an effective extension system. More often it is one or more of the following:

- o The lack of an unequivocally more productive technology than the one the farmer is using. If this is not the case, armies of extension agents will not overwhelm this problem.

- o Government policies with respect to foreign exchange rates, commodity or input prices, marketing, etc., which discriminate against farmers and harm their incentives to produce; and
- o An inadequate physical and institutional infrastructure to meet the requirements of a more productive agriculture.

As long as any one of these constraints exists, I believe investments in agricultural extension will yield little, if any, benefits to society.

In summary then I would say:

- o Investments in agricultural research will continue to be a principal part of ANE Bureau's assistance for agricultural development. Indeed a lynch pin of our Bureau's strategic approach to agricultural and rural development is support for NARS.
- o I believe the nature of A.I.D.'s specific support for agriculture research will focus on:
 - linking LDC institutions to public and private institutes in the West,
 - linking individuals,
 - further engaging private, non-government institutions in addressing agricultural research challenges,
 - providing short-term technical assistance, and

-- providing support for advanced training--particularly
for post doctorates.

Again, I would like to thank you for this opportunity to meet
with this most interesting and important group. I look forward
to your questions.

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