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REDUCING POST HARVEST FOOD LOSSES

Audit Report Number 78-135

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Area Auditor General Washington
Agency for International Development
Washington DC 20523

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
SUMMARY	3
FINDINGS AND RECOMMENDATIONS	
AID/Washington	4
Overseas Missions	4
Egypt	5
Bangladesh	7
Paraguay	8
Honduras	9
Sahel Region	10
Southern Africa	12
The Philippines	13
Indonesia	14
CONCLUSIONS	14
AID/W BUREAU COMMENTS	15
EXHIBITS	
A - Memorandum from AA/DS	
B - Memorandum from AA/ASIA	
C - Memorandum from AA/NE	
D - Memorandum from LAC/DR	
LIST OF REPORT RECIPIENTS	

REDUCING POST HARVEST FOOD LOSSES

INTRODUCTION

In November 1976 the General Accounting Office (GAO) issued its audit report on "Hungry Nations Need to Reduce Food Losses Caused By Storage, Spillage, and Spoilage". The report contends that the reduction of food losses after harvest in developing countries has not been adequately emphasized.

GAO noted that in September 1975 the American Secretary of State addressed the UN General Assembly and reported that food saved through reducing post harvest food losses could match the total of all food aid worldwide. The Secretary of State called for the Food and Agriculture Organization, the UN Development Program and the World Bank jointly to set a goal of cutting post harvest food losses by 50 percent by 1985 and to develop a comprehensive plan to achieve the goal. This goal was adopted by the UN General Assembly.

Nonetheless, GAO found that "several donors have recognized the food-loss problem, but they have not demonstrated a sense or urgency in dealing with it". The report included observations on GAO visits in early 1975 to Kenya, Tanzania, India, Indonesia, Pakistan, Sri Lanka, Peru and Uruguay, and contained the following recommendations:

> "As an integral part of the Agency for International Development's future agricultural assistance programs, we recommend that the Administrator, AID, emphasize better facilities, practices, and self-help measures for preserving and distributing the food: (1) already being produced and (2) anticipated to be produced. Such considerations should be part of the programming documentation.
>
> We also recommend that the Secretaries of State, Agriculture, and the Treasury and the Administrator, AID, work for concerted action among major donors, including the international organizations and financial institutions, for reducing food losses in developing countries. Such actions should include:
>
> 1. Encouraging developing countries to take appropriate self-help measures.
>
> 2. Developing programs to reduce post harvest food losses of food already being produced.
>
> 3. Making loss-reduction measures an integral part of future programs to increase production.

4. Establishing an effective mechanism for coordinating loss-reduction actions.

5. Laying the groundwork for an assessment in 1980 of progress toward the 50-percent reduction target endorsed by the UN General Assembly and the FAO Conference."

AID, one of the report's addressees, was in general agreement with the thrust of the GAO report, but contended that GAO did not give full recognition for AID's past and ongoing efforts. AID concluded its formal response to the draft of the GAO report (dated June 8, 1976) with this paragraph:

> "In summation, AID considers the improvement of food grain storage and processing in the LDC's to be an integral component of our food and nutrition program strategy. We agree that post harvest food loss reduction should have increased attention. Accordingly, the Agency is emphasizing food storage, processing and transportation systems in our agricultural production and development programs" (emphasis added).

Intermittently, during September through December 1977, we did a follow-up audit on the GAO report. AID is in the early stages of implementing GAO's recommendations, and we wanted to assure ourselves that in these early stages AID is being responsive to GAO's recommendations, that progress is being made in the effort to reduce post harvest food losses. To do this, we sought answers to two questions, both directly related to GAO's recommendations:

1. Is AID effectively increasing its emphasis on reducing post harvest food losses?

2. Is AID working for concerted action with other donors to reduce post harvest food losses?

Our follow-up audit was conducted at AID Missions in Egypt, Bangladesh, Paraguay, Honduras, the Philippines, Indonesia and at AID's Southern Africa and Sahel Regional Offices. We also discussed AID's efforts to reduce post harvest food losses with officials in AID/W.

SUMMARY

AID was involved in a wide range of activities directed at reducing post harvest food losses before the GAO report was written and continues to address the problem. AID/W has increased its emphasis on reducing post harvest food losses. Our field audit, however, indicated that, in general, overseas Missions have not consistently increased emphasis on reducing post harvest food losses, nor have they developed programs for concerted action with other donors to achieve this goal.

It appears to us that AID's worldwide efforts to reduce post harvest food losses need better focus if the GAO recommendations are to be promptly implemented. We recommended that the Office of Agriculture, Bureau for Development Support, in Coordination with regional bureaus and related organizations, identify resources needed and steps to be taken to fulfill AID's commitment to GAO to emphasize post harvest food reduction.

FINDINGS AND RECOMMENDATIONS

AID/Washington

AID/W has increased its emphasis on reducing post harvest food losses in a number of ways. A new position was created in the Office of Agriculture for a specialist in reducing post harvest food losses. That position is now filled under an Intergovernmental Personnel Act appointment for the year beginning July 1, 1977. The specialist has been engaged in a wide variety of activities, involving seminars, liaison with contractors and working with other AID offices on reducing post harvest food losses. AID has a contract with Kansas State University involving post harvest food losses. The 1974 KSU contract has been extended with expenditures expected to increase to about $900 thousand in 1978, from roughly $800 thousand in 1977 and $600 thousand in 1976. AID has negotiated a contract with the University of Missouri to develop maize varieties resistant to aflotoxins.

The National Academy of Sciences has assessed world food losses under an AID-financed study begun in January 1977, and expects to issue its report in June 1978. That study is being used to help AID better direct its future efforts, according to AID/W officials. AID/W is currently in the early planning stages in four new projects designed in consonance with the National Academy of Sciences study.

These examples of AID activities in this field are indicative of AID's efforts to expand its activities relating to reducing post harvest food losses.

Overseas Missions

In our audits of the overseas Missions, we found that the degree of emphasis on reducing post harvest losses varied widely from Mission to Mission. We also found that in general the Missions have not yet begun "working for concerted action" with other donors. We inquired at each Mission about what kinds of guidance they had received from AID/W regarding goals and approaches to implement the GAO recommendations. We also examined current and forecast Mission programs to determine if increased emphasis is being placed on reducing post harvest food losses whether or not they have received AID/W guidance. Finally, we reviewed Mission activities directed toward working for concerted action with other donors.

The following table shows the results of our field audits in outline:

	Received AID/W Guidance	Emphasis on Reducing Losses	Working for Concerted Action
Egypt	No	Some	No
Bangladesh	No	Limited	Limited
Paraguay	No	No	No
Honduras	No specific guidance	Some	No
Sahel Region	No	Some	Yes
Southern Africa	No	No	No
The Philippines	No specific guidance	Some	Not much yet
Indonesia	No	Not enough	No

Draft reports were prepared in the field, giving details of findings, including recommendations to overseas missions when appropriate. The reports were presented to Mission officials for their review and consideration. Selected portions of the field audit reports are abstracted below.

Egypt

We were unable to find any AID/W guidance to the Cairo Mission on reducing post harvest food losses. Mission officials who were interviewed were also not aware of any guidance received from AID/W nor had they seen a copy of the GAO report on the subject.

Two of the six programs reviewed provided for increased production but did not contain measures to reduce post harvest food losses. One, the Major Cereals Project No. 263-0070, was established to develop an effective comprehensive national maize and wheat research and production program with the objective of increasing maize and wheat production by 30-50 percent over a five year period. The objective is to be achieved by reducing and removing constraints to production. The other, Small Farmer Production Project No. 263-0079, provides for increased levels of farm production through ready availability of credit and other inputs to production. Neither of these projects have incorporated measures

to assure adequate storage and handling of the anticipated increased production. Studies are being made, however, in this area and may result in new programs.

Four projects which will contain some measures to reduce post harvest food losses are as follows:

Rice Research and Training (Project No. 263-027) would provide increased knowledge in rice processing and storage.

Aquaculture Development (Project No. 263-064) would provide improvements in the fisheries collection system and in-shore facilities to reduce by half the currect losses.

Agriculture Development Systems (Sub-Project No. 263-041) would study the production and marketing of horticulture crops which are by nature highly perishable.

Agribusiness Development (Project No. 263-087) is to construct facilities for processing packing, freezing and storing of fruits, vegetables, poultry and meat production in order to eliminate high loss due to spoilage waste and infestation.

The Mission also has agreed to finance projects in Grain, Tallow, Oil and Fats storage. Facility improvements are needed to handle the increasing quantities of imported food products to eliminate constraints and to provide a comprehensive nationwide storage and distribution system. Studies are underway to identify and "prioritize" specific storage system projects.

A Seminar was held in July 1976 in Alexandria, Egypt, which was attended by over 100 people from various Middle East countries as well as officials from the Government of Egypt. The Seminar was sponsored by AID's office of Food For Peace, Office of Nutrition and the Technical Assistance Bureau, to encourage improved food warehousing and handling practices for locally grown commodities and PL 480 commodities. It did not appear, however, that this seminar contributed to the efforts the Egypt Mission is now making to reduce post harvest food losses.

Cairo Mission officials stated that they are not coordinating with other donors, governments and international financial institutions, to focus on the problem. A representative of the Food and Agriculture Organization, whom we interviewed, confirmed that there is no concerted action for reducing food losses.

Several studies are now in process and recommendations from these studies will determine areas of concentration in agriculture. It is anticipated that some of these studies will contain recommendations to improve storage and processing facilities, handling and practices for

preserving the food supply as recommended in the GAO report. It is also planned to increase the staff in agriculture in FY 1977 and FY 1978 to provide the increasing need for technical assistance.

Bangladesh

The Bangladesh Mission has not received guidance from AID/W regarding the reduction of post harvest food losses. Nor has AID/W provided guidance to the Mission concerning coordination of the food loss problem with other donors.

Bangladesh is agrarian, densely populated and very poor. The average cultivator farms less than two acres and only a minor fraction of the total land is actually cultivated by owners. Share croppers bear all input costs, assume all risks of production and pay the landowner from 50 to 65 percent of production. A Kansas State University report, dated July 1976, estimated that about 90 percent of the population in Bangladesh comprises subsistence and peasant farm families. A major part of the total harvested foodgrains is therefore stored and consumed on the farms.

It is estimated that a substantial amount of foodgrain production in Bangladesh is lost every year during the post harvest period due to improper and inadequate post harvest handling, drying, milling and storage methods. Data on these losses is not fully known.

Practically no attention has been given to on-farm storage aspects by the Government of Bangladesh.

USAID/Bangladesh has done some ground work to determine needs in foodgrain storage and transportation as pertains to the public sector. A recent (May 1977) AID-financed study of foodgrain storage came to the conclusion that in view of the number of donors already in the field, there was no need for USAID to become involved in construction or rehabilitation of warehouses or in financing of fumigants or other materials. Instead of financing grain storage warehouses, the Mission agreed to finance fertilizer storage and handling which is also a priority need.

The Mission is engaged in vertebrate (rats and other pests) research to determine the extent of these losses and the effect that on-going control efforts may have on these losses. These losses are estimated at 4 percent pre harvest and 1 percent post harvest.

USAID/Bangladesh has proposed a study to develop a foodgrain storage and transportation strategy and plan with the objective of minimizing foodgrain imports and minimizing domestic food production. One of the components to be considered is spoilage as it relates to infestation, dampness, storage time, molds and other causes.

The AID Offices of Agriculture, Nutrition and Food For Peace sponsored a seminar in food storage and handling practices. CARE, USAID/Bangladesh and the Ministry of Agriculture attended the conference. Funding was provided for 15 attendees. The seminar dealt with the problem of handling and storing grain, control procedures that could be used to preserve foodgrains, packaging techniques and procedures, and the problem of food losses due to insect and rodent infestation and moisture exposure. Our interview with a Mission official who attended the seminar disclosed that it was educational and built enthusiasm.

The Mission's program goal is to achieve foodgrain self-sufficiency in Bangladesh by 1985 through improved agriculture production, rural development, population control and improved health and nutritional needs. The strategy does not include measures to reduce post harvest food losses. More attention should probably be given to this aspect as a factor in achieving food self-sufficiency.

Paraguay

Based on conversations with USAID officials and a review of files, we found that USAID/Paraguay has not learned of AID's intention to increase emphasis on reducing post harvest food losses. There has been no guidance received at the USAID on the subject, and, therefore, USAID officials do not know about including such considerations in programming documentation.

USAID officials did tell us that, through their own personal knowledge, training and background, they are aware of the need for increased emphasis on reducing food losses. The Agriculture Officer also told us that food losses are part of a larger problem that the USAID is attempting to resolve, that of marketing problems in Paraguay.

In our opinion, the USAID is not addressing the problem of reducing post harvest food losses as GAO recommended. No ongoing or planned projects are directed wholly or almost wholly to the subject of food loss reduction activities, via better facilities, practices and self-help measures for preserving and distributing food being produced or to be produced.

This conclusion was reached after conversations with USAID officials and after a cursory review of the latest Annual Budget Submission, the Development Assistance Program, the Sector Analysis, a paper on Paraguay's Market System, recent and planned USAID program and project documents, and other information.

The USAID Agricultural Officer did state that, in his opinion, a FY 79 project, Market Planning and Technical Assistance, would answer some marketing problems that would then lead to food loss reductions.

However, our review of the Project Identification Document indicated no mention of food losses, per se, to be addressed in the project.

USAID comment - "In the absence of data on the dimensions of the problem in Paraguay, the USAID has not seen fit to program resources on the basis of an assumption that reduction of post harvest food losses is a high priority objective. Moreover, our experience leads us to believe that projects focused wholly or almost wholly on such a limited objective in the complex agricultural development situation are unlikely to be successful. We state our objectives in terms of increased income for producers and improved supplies for consumers (quantity, quality, price, and variety). Reduction of food losses may contribute to these more person-centered objectives; but there may be trade-offs through improved transportation, grading, processing, seed selection, etc., which contribute more to the objectives than a reduction of food losses."

Based on our discussions with USAID officials and a review of documents, we determined that the USAID is not working toward a concerted action to specifically reduce food losses, either at the host country or the international donor level. AID/W has not given the USAID any written guidance on this issue. The USAID again stated that there are ongoing efforts to work with the host country in improving the marketing structure within the country.

It should be noted that USAID reported that it does not have sufficient data with which to identify the extent of food losses in the country and thus can not take the appropriate actions against these losses. Perhaps research is needed to develop good data on the extent of such losses for future actions.

Honduras

AID/W has provided the USAID with some current AID thinking on the subject of post harvest food losses but has not established any specific requirements for increased USAID emphasis on reducing such losses. Discussions with USAID officials indicate an awareness of the problem at the local level and USAID has a recent AIDTO Circular No. 326 in the file dated September 3, 1977, entitled "External Donor Assistance on Post Harvest Loss Problems". USAID officials said this was the only documentation received thus far that directly addressed the subject. The AIDTO focused on studies and proposals made by the International Group for Agricultural Development in Latin America and the Caribbean, on reducing post harvest food losses in Honduras and in Central America.

The USAID is to some extent addressing this problem as the GAO recommended, but the degree of accomplishment is not being measured or

determined. Specific benchmarks and end-of-project indicators have not been established. There are no present or proposed grants or loans sponsored by AID directed wholly or almost wholly to post harvest food loss reduction in Honduras. There are, however, within some projects certain activities that are directed to the problem. That is because such activities fall within a larger sector goal of improving the well-being of the rural poor through services and facilities designed to increase the productivity and income of the small farmer.

Based on our discussion with USAID officials and a review of documentation, we learned that the USAID is not working toward a concerted action with other donors to specifically reduce food losses in Honduras although USAID officials do meet regularly with other donors. The last international meeting on food losses in which USAID participated was a seminar held in 1974. It was sponsored in part by AID through its disaster relief efforts in the aftermath of Hurricane Fifi. AID/W has not specified to the USAID a level of concerted effort required of the USAID.

Sahel Region

We selected Niger and Senegal of the Sahel Region for our review of reducing post harvest food activities. During the week of September 24, 1977, we visited these countries as well as the Regional Economic Development Services Office/West Africa in Abidjan to determine the present status of these activities.

We found no indication of AID/W guidance to the field on increased emphasis in reducing post harvest food losses. In fact, none of the three AID offices visited had a copy of the GAO report as would be expected. Nonetheless, the AID offices in the Sahel Region appear to be aware of and generally responsive to the need for reduction of food losses, both pre and post harvest.

On-farm post harvest food losses in Niger and Senegal are estimated to be in the 5 - 10% range. The low level is due to the dry climate and traditional practices followed by farmers in storing food. The quantity of food produced is still relatively low due to the limited rainfall. Therefore, the level of post harvest stocks on hand is not high. In Niger on-farm food storage, primarily in mud silos, is presently estimated to be 250,000 metric tons.

Off-farm post harvest food loss rates are estimated to be from 25-35% largely due to the lack of sufficient storage, ineffective storage, and the improper treatment of stored food. Niger off-farm cereal stocks are presently estimated to be 35,000 metric tons. Government food storage capacity in Niger has risen from 12,000 metric tons in 1973 to nearly 103,000 metric tons in mid-1977.

In Niger, AID Cereals Production Project No. 683-0201 covering the September 1974 - September 1979 period has a planned funding of $13.1 million. While the project is essentially for increased food production, ten storage sites of 1,000 metric tons each are to be constructed by the end of FY-1978 to help meet food storage needs in Niger. Also, Government of Niger staff attended an AID sponsored Food Storage Seminar in January 1977.

In Senegal, the recently initiated AID grain Storage Project 685-0209 is to finance construction of 30,000 metric tons of storage and provide grain storage training of several hundred Government of Senegal personnel during 1977 - 1982. This additional storage capactiy will augment the Government of Senegal-financed construction of a 30,000 metric ton storage facility. These will be the initial facilities of a planned level of 120,000 metric ton storage capacity needed by Senegal within five years. This capacity is to be used for buffer cereal stocks and to provide a base for commercializing cereal marketing. Project financing of $11.1 million will include $6.2 million from the Government of Senegal with the remainder from AID.

The AID Senegal Cereals Production Project 685-0201 includes the establishment of a revolving credit fund to help small farmers construct grainaries and purchase pesticides. The project is expected to add on-farm storage of 4 ton capacity silos enabling farm families to have low cost millet storage.

Additionally, AID had regional Sahel projects. The Entente Area Grain Production and Marketing Project 625-0161 is providing a Storage/Marketing Advisor to the Entente Cereals Regional Office in Niger, and Marketing Advisors to the Cereals Offices in Niger and Upper Volta. The Sahel Crop Protection Project 625-0916 is providing $4.3 million to help improve capability of the Sahel States, including Senegal, to control crop pests and to inform farmers of pest management practices to reduce pre and post harvest food crop losses. This project is expected to be the initial step in establishing crop protection centers in the Sahel.

After FAO sponsored consultations in Rome, the United States and other donors along with the countries of the Sahel Region agreed to proceed with a new comprehensive crop protection program for the entire Sahel. The estimated financing proposed in March 1977 is $72 million over a fifteen year period including an AID portion in the area of $30 million. Among the various elements of the proposed program is an Inter-Country Program to Improve Post Harvest Food Protection in the Sahelian Zone with a funding level of $2.9 million. This program is expected to help adapt known technology to Sahelian countries leading to improved grain storage.

The proposed multi-donor Inter-State Permanent Committee for Drought Control in the Sahel program indicates that in the near term Sahel

pre harvest crop protection is going to receive much greater emphasis than reduction of post harvest food losses.

Based on our selected review in the Sahel Region, AID is working for concerted action with other donors to reduce post harvest food losses. In Niger and Senegal, the host government and various donors are attempting to meet country needs for more storage facilities, training storage personnel, and commodities to preserve foods.

Southern Africa

For this reason, we visited the Office of Southern Africa Regional Activities Coordination (OSARAC) headquarters in Mbabane, Swaziland. OSARAC has functional responsibility for five coutries: Botswana, Lesotho, Swaziland, Malawi, and Zambia. However, there are no AID-supported agriculture-type projects in Malawi or Zambia.

We found there has been no AID/W guidance to the field on reducing post harvest food losses. We concluded this because OSARAC officials (RDO, Program Officer, Agricultural Officer) could not recall any directives or instructions from AID/W on the matter. Further, we found nothing in the files in the way of such instructions or guidance.

There are no significant AID-supported post harvest food loss reduction activities either ongoing or projected in OSARAC.

OSARAC is not addressing the problem as GAO recommended because OSARAC is convinced there is no real problem in Southern Africa with post harvest losses, nor has there been such a problem in the past. OSARAC explained that the Southern African countries are all food deficit countries, that is, all food produced is consumed in-country and the excess demand is then imported. Futher, food produced is for the most part consumed directly by the producer, with somewhat less than 5% of production entering commercial channels in the case of maize, the major crop. Climatic conditions are favorable to harvested food. Very shortly after harvest there is generally freezing or very cold weather which inhibits any infestation. In addition, with the exception of wheat grown in Lesotho, the other cereals mature and are harvested in the dry season, with the result that moisture is not a problem after harvesting.

OSARAC has projects which include financing of food storage facilities, but this is merely a component of the project's structure and not a strategy to reduce post harvest losses.

OSARAC recognizes that post harvest losses can become a problem in the future, but as of now the emphasis is on building institutions capable of increasing and marketing crop production. Implicit in this is the preservation of food through proper storage and handling.

OSARAC has not been advised by AID/W to work with other donors and, as mentioned, has not been instructed or been given guidance in emphasizing programs to reduce post harvest losses. Further, since OSARAC does not believe a food losses problem exists at this time, there has been no need to work with other donors on this, and OSARAC has not done so. However, it did finance a participant to the food seminar in Alexandria, Egypt.

The Philippines

The Mission has not received direct communications and guidelines from AID/W with specific emphasis on the problem of reducing post harvest food losses. The Mission does not have any package of guidelines from AID/W describing how the problem should be addressed in future programming of technical assistance to the agricultural development of the Philippines. Mission officials were unaware of any guidance from AID/W regarding GAO's recommendations that AID work for concerted action with other donors.

However, in the absence of AID/W direct communications and guidelines, the Mission is fully aware of the need for increased emphasis on reducing post harvest food losses. It should be noted, furthermore, that the early 1977 AID Agricultural Development Policy Papers issued by the Office of Policy Development and Analysis, Bureau of Program and Policy Coordination, did include the strengthening of the various elements of production, facilitating infrastructure and services for storage and marketing as program levels of priority.

The problem of providing adequate handling and storage facilities for rice and corn have been a concern of the Government of the Philippines (GOP) for a number of years because of the exceedingly large grain losses to insects, rodents and spoilage in the storage and distribution systems.

Mission officials stated that the catalyst that will bring together a number of other donors to focus on post harvest food loss reduction activities will be the Post Harvest Research and Development Program. This program, working within the Southeast Asian Regional Centre for Graduate Study and Research (SEARCA), brings together the US (AID), Canada (CIDA), National Grains Authority (NGA), and the International Development Research Center (IDRC). Other nations which are interested in the program are Australia and the Netherlands. With a Mission official serving on the Policy Advisory Board ad interim, the Mission is in a good position to provide input into the program and take the lead in achieving a coordinated approach to post harvest technology.

At the time of our review in August 1977, there were three AID/W centrally funded projects that were either directed wholly or almost

wholly to pre harvest and post harvest food loss reducing activities. At that time there were no USAID/Philippines projects that were directed either wholly or almost wholly to post harvest food loss reduction activities. However, the Mission has recognized the problem of post harvest food losses as evidenced in the current programming documents for ongoing and future projects.

We concluded that achievement in reducing the nation's post harvest food losses depends quite heavily on the implementing of the Mission's comprehensive agricultural development projects in which a part of the total project activities are directed at reducing these losses. Our survey did not attempt to review the overall implementation plans for these projects.

Indonesia

AID/W has not provided guidelines to the field regarding the problem of reducing post harvest food losses.

In the absence of AID/W direct communications and guidelines, the Mission has recognized the need for reducing post harvest food losses. Our review of the USAID/Indonesia Annual Budget Submission for Fiscal Years 1977, 1978, and 1979 indicated there has been no emphasis on the problem of post harvest food losses in the discussion applicable to ongoing or projected projects in the agricultural development sector in Indonesia. At the present time, there are no USAID/Indonesia projects underway or projected for the future which are either directed wholly or almost wholly to post harvest food loss reduction activities. The Mission has, however, included post harvest food loss reduction activities within two rural development projects and one science and technology project.

USAID/Indonesia presently is not involved in working for concerted action with other appropriate donor agencies to focus on post harvest food loss reduction activities. We believe it premature to recommend that the Mission take immediate action to work towards this goal as recommended by GAO until significant post harvest loss reduction activities have been developed by the USAID in coordination with the Government of Indonesia.

CONCLUSION

AID agreed with the GAO audit report, "that post harvest food reduction should have increased attention". However, it appears to us that AID's worldwide efforts to reduce post harvest food losses need better focus if the GAO recommendations are to be promptly implemented. Now,

some overseas Missions are placing some emphasis on solving the problem, but others are not. In general the Missions have not developed programs for concerted action with other donors to reduce post harvest food losses.

Recommendation No. 1

That the Office of Agriculture, Bureau for Development Support (DS/AGR), in coordination with regional bureaus and related organizations, identify resources needed and steps to be taken to fulfill AID's commitment to GAO to emphasize post harvest food loss reduction.

AID/W BUREAU COMMENTS

We circulated a copy of this report in draft form to the AID/W Development Support Bureau and to regional bureaus for their review and comments. Copies of their responses are shown in Exhibits A through D. In general, with the exception of Latin America, the AID/W bureaus concurred in the report findings. Their comments included additional information tending to support views expressed in the audit report.

The Development Support Bureau noted that the Agency needs to develop country-specific programs to reduce post harvest food losses. They believe that the best way to proceed is through assessment of the problem in each country by the local government, with assistance from the USAID Missions. DSB stated that they have issued agricultural policy guidance to the Missions, and argued that more general guidance is not the critical need. Instead, "...the Missions and the LDC governments need direct assistance from technical experts who can help sort out the problems and devise sensible program strategies for each country. DSB is committed to making this happen by working with regional bureaus and Missions to identify opportunities for programs, and by providing the technical resources to the field".

DSB stated that while the general tone of the report is substantially correct, "we suggest coordination at the DS Bureau level both among AID, State, Treasury and Agriculture, and among AID and international donors has been greater than implied by the AAG/W report".

The DSB response concluded:

> "We believe that in DSB we have identified the resources needed to move the PHFL program forward, recognizing that the needs will change as more country programs develop. We think there is a long way to

go at the country level; we are trying to pick out those countries where the PHFL problem is most critical. In support of the Regional Bureaus, we need to encourage program development through direct technical assistance. As our resources expand, we think the pace of the program will accelerate."

The Asia Bureau, while generally concurring with the report findings and recommendations, noted that the lack of "working together for concerted action with other donors," as mentioned in the report, "can in part be attributed to the absence of professional talent in USAID Missions for designing or planning post harvest food loss activities. Professional specialists are needed in the USAID Missions before expanded activities will occur." Regarding the report recommendation, the Asia Bureau stated that, "we will encourage the missions to collaborate with and to draw upon professional expertise of the Office of Agriculture, Development Support Bureau and other organizations in identifying technical skills to fulfill the Agency's goal in reducing post harvest food losses. USAID Missions will also be encouraged to coordinate to the extent possible future project activities with other donor institutions."

The Near East Bureau pointed out that the Small Farmer Production project, 263-0079, mentioned on page 5 of the report, "now calls for an expert in village grain storage. A major section of the feasibility studies will address the nature of post harvest food losses and means whereby they can be reduced. The project will address actual reduction of losses if feasible means to do so can be identified."

As noted above, the Latin America Bureau took exceptions to the report findings. They contended that the report "seems to make assumptions which should be tempered". These included (a) "an implied assumption that there is a known technology or (technologies) which can readily be applied to reduce post harvest losses to a more reasonable level," (b) "...to ignore the role of costs and benefits in reducing post harvest losses," (c) "...that the wording 'Post Harvest Loss' must appear in the project before the project will have any effect on reducing these losses," (d) ".. that all missions should be directed by AID to apply strong and more or less equal emphasis." LA Bureau stated that it offers general guidance to the field missions, and that "the specific make-up of a country agricultural program comes generally from AID guidance applied to the local situation. As might be expected, post harvest losses, opportunities for economic reduction and local government interests vary among countries. We do not try to force all country agricultural programs into the same mold. Therefore, all LAC countries do not have the same levels of effort in reducing post harvest losses."

Also, LA Bureau criticized the report, "not for what it says, but rather for what it does not say". The Bureau then cited related activities in various countries which were not covered in our request.

However, as noted in the Introduction Section of this report, selected countries were reviewed and reported on. And for those countries reviewed the report contains only abstracts of the field audit reports -- no effort was made to identify and report on all post harvest food production activities worldwide.

A follow-up discussion with the LA Bureau on July 13, 1978 led to the realization and agreement that:

NO SINGLE DISCIP. APPROACH -

1. No single-discipline approach is likely to solve the problem of reducing post-harvest food losses. Instead, a multi-technology is more likely to meet with more than limited success.

OPPORT. FOR MAJOR BREAKTHROUGH - NOT IDENT.

2. The "state of the arts", neither within nor outside the Agency, has attained a level whereby major breakthroughs are likely to occur, soon.

DO NOT KNOW WHAT RESOURCES REQUIRED

3. It is not known what resources may be required, or are available, to control food losses on a scale as envisioned by the General Accounting Office.

DO NOT ALLOC. RESOURCES TO SINGLE DISC. APPROACH

4. Care needs to be exercised that whatever resources are available are not being allocated to limited-success single technology approaches, when their committment to multi-technology approaches would be more effective.

5. While the Agency has made some progress towards meeting the expectations expressed in the General Accounting Office report, each Bureau appears to be working the problem on its own, with little synergism between the various AID/W organizations and/or the Missions, overseas.

6. To be fully responsive to its mandate the Agency needs to implement Recommendation No. 1, with continuing top management support, as soon as possible.

7. It might be to the Agency's advantage to consider the pros and cons of centralizing the post-harvest food loss reduction function, by taking it out of the Bureaus and establishing a new organization for it.

REFERS TO REGIONAL CENTERS

MEMORANDUM

JUN 26 1978

TO: AAG/W, Mr. Rolland J. Deschambault

FROM: AA/DS, Sander Levin

SUBJECT: Draft Report on Reducing Post Harvest Food Losses

In general we accept the analysis, conclusion and recommendation in the "Draft Report on Reducing Post Harvest Food Losses", sent under your memorandum of May 31, 1978. From our perspective, the Agency needs to develop country-specific programs to reduce postharvest food losses. As your survey revealed, the importance and the nature of the postharvest food loss (PHFL) problem varies from country to country. The appropriate solutions for each country cannot be specified from Washington. We believe that the best way to proceed is through assessment of the PHFL problem in each country by the LDC government, with assistance from the USAID Mission. These problem assessments are best handled as part of broader sector assessments which are the basis for an agricultural production and distribution program. The PHFL problem is then placed in context as an important aspect of the agriculture program strategy.

The Bureau of Program and Policy Coordination has issued agricultural policy guidance to the Missions which makes PHFL programs an important part of a comprehensive agriculture strategy. We think that the critical need is not more general guidance; the Missions and the LDC governments need direct assistance from technical experts who can help sort out the problems and devise sensible program strategies for each country. DSB is committed to making this happen by working with regional bureaus and Missions to identify opportunities for programs, and by providing the technical resources to the field.

We wish to point out that through the Office of Agriculture, Development Support Bureau (DS/AGR) we have, for several months, been actively pursuing the specific recommendation made by AAG/W. This is reflected in proposals for five new centrally funded postharvest loss projects and proposals for increased DS/AGR staffing for postharvest loss activities.

While the general tone of your report is substantially correct, we suggest coordination at the DS Bureau level both among, AID, State, Treasury and Agriculture, and among AID and international donors has been greater than implied by the AAG/W report.

The Office of Agriculture, DS Bureau, has met several times to discuss PHFL programs with representatives from State, Treasury and Agriculture.

Through our Kansas State University (KSU) contract, AID has been represented at the Group for Assistance in Systems relating to Grain After Harvest (GASGA). This is the organization the National Academy of Sciences has recommended as the central coordinating agency among major donors in the area of postharvest food loss prevention activities. Membership in GASGA includes FAO, Tropical Products Institute (TPI); The International Development Research Centre, Ottawa, Canada (IDRC); The International Institute of Tropical Agriculture (IITA); The Institute for Tropical Agronomic Research and Food Crops, Paris, France (IRAT); The Commonwealth Scientific and Industrial Research Organization, Canberra, Australia, (CSIRO); and the Kansas State University Food and Feed Grain Institute (KSU).

Additionally, the Office of Agriculture, DS Bureau, has met with representatives of the World Bank on several occasions to discuss collaboration and/or cooperation in postharvest loss reduction activities.

While we agree that no specific guidance has been given to Missions to increase emphasis on postharvest food loss reduction, guidance has been issued on general technical services and training available to Missions in the area of grain postharvest loss analysis under the KSU GTS contract "Grain Storage, Handling, Processing, and Marketing and Agribusiness Development." In fact of the Missions included in your audit, the Egypt, Bangladesh, Chad, Paraguay, Pakistan, Philippines, and Indonesia Missions have requested and received technical assistance under this contract since 1973. Of the Missions in your audit, Honduras is the only one which has not requested and received assistance under the KSU contract since 1973.

We believe that in DSB we have identified the resources needed to move the PHFL program forward, recognizing that the needs will change as more country programs develop. We think there is a long way to go at the country level; we are trying to pick out those countries where the PHFL problem is most critical. In support of the Regional Bureaus, we need to encourage program development through direct technical assistance. As our resources expand, we think the pace of the program will accelerate.

OPTIONAL FORM NO. 10
JULY 1973 EDITION
GSA FPMR (41 CFR) 101-11.6

EXHIBIT B

UNITED STATES GOVERNMENT

Memorandum

TO : AAG/W, Rolland J. Deschambault

DATE: JUN 22 1978

FROM : AA/ASIA, John H. Sullivan

SUBJECT: Draft Report on Reducing Post Harvest Food Losses

We have reviewed the subject draft report and generally concur in the findings and recommendations. Also we believe it is a well written report.

The discussion of the audit findings in overseas missions on page 5 no doubt accurately reflects the degree of emphasis now being directed toward reducing post harvest losses. However, we would suggest that the lack of "working together for concerted action with other donors", as mentioned in the report can in part be attributed to the absence of professional talent in USAID Missions for designing or planning post harvest food loss activities. Professional specialists are needed in the USAID Missions before expanded activities will occur.

Recommendation No. 1: "That the Office of Agriculture, Bureau of Development Support (DS/AGR), in coordination with regional bureaus and related organizations, identify resources needed and steps to be taken to fulfill AID's commitment to GAO to emphasize post harvest food loss reduction." We will encourage the missions to collaborate with and to draw upon professional expertise of the Office of Agriculture, Development Support Bureau and other organizations in identifying technical skills to fulfill the Agency's goal in reducing post harvest food losses. USAID Missions will also be encouraged to coordinate to the extent possible future project activities with other donor institutions.

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UNITED STATES GOVERNMENT

EXHIBIT C

Memorandum

TO : AAG/W, Rolland J. Deshambault

DATE: JUN 14 1978

FROM : AA/NE, Joseph C. Wheeler

SUBJECT: Draft Report on Reducing Post Harvest Food Losses

This is in regard to your draft report of June 1, 1978. Reference is made to page 7 of the report regarding our efforts in Egypt in reduction of Post Harvest Food Losses. The design team for the Small Farmer Production project, 263-0079, now calls for an expert in village grain storage. A major section of the feasibility studies will address the nature of Post Harvest Food Losses and means whereby they can be reduced. The project will address actual reduction of losses if feasible means to do so can be identified.

A typographical error is apparent with respect to project 263-0064, also mentioned on page 7. This is an aquaculture project.

21

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

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UNITED STATES GOVERNMENT

Memorandum

EXHIBIT D

TO : AAG/W, Roland Deschambault

DATE: June 14, 1978

FROM : LAC/DR, Marshall Brown

SUBJECT: AAG/W Draft Report on Reducing Postharvest Food Losses

Unfortunately, the draft report completely underestimates the amount of emphasis and the amount of work that is being done on reduction of postharvest losses within the LAC Missions and within the various support offices of AID/W which have a strong interest in this field.

1. The AAG draft paper seems to make several implied assumptions which should be tempered.

a. One is an implied asumption that there is a known technology or (technologies) which can readily be applied to reduce postharvest losses to a more reasonable level. A cursory review of the presently circulating National Academy of Sciences draft study of "Postharvest Food Losses in Developing Countries" shows the complexities of evaluating and lowering weight, quality, and moisture losses which may occur in food crops, fish, meat, and dairy products from time of harvest to the time the product is consumed. The study points up the great need for additional research. (This study was financed by AID/DSB).

b. A second assumption appears to ignore the role of costs and benefits in reducing postharvest losses. As the above cited NAS report states, loss reductions ultimately depend upon the economic justification of reducing those losses. Expenditures on food conservation must be justified by the particular need and circumstances. This is the way the LAC Bureau is supporting mission postharvest loss projects - on a case by case basis as probable costs, returns, manpower and organizational requirements are determined.

c. The draft report seems to imply that the wording "Postharvest Loss" must appear in the project title before the project will have any effect on reducing these losses. This point is illustrated in the following paragraph taken from the report.

"The USAID Agricultural Officer (Paraguay) did state that, in his opinion, a FY-79 project, Market Planning and Technical Assistance, would answer some marketing problems that would lead to food loss reductions. However,

our review of the Project Identification Document indicates no mention of food losses, per se, to be addressed by the project."

It appears that not only was the above cited project misunderstood, but other relevant projects may have been overlooked in searching for the specific wording "reduction of postharvest losses".

d. The report states that some missions are placing emphasis on reduction of postharvest losses and others are not. The paper implies that all missions should be directed by AID to apply strong and more or less equal emphasis.

The LAC Bureau offers general guidance to the field missions on areas such as agricultural production or marketing. The specific make-up of a country agricultural program comes generally from AID guidance applied to the local situation. As might be expected, postharvest losses, opportunities for economic reduction and local government interests vary among countries. We do not try to force all country agricultural programs into the same mold. Therefore, all LAC countries do not have the same levels of effort in reducing postharvest losses.

2. Further criticisms of the draft report, as it stands, are not for what it says, but rather for what it does not say. For example:

a. The report should note the support AID has given to the International Group for Agricultural Development in Latin America and the Caribbean (IGAD/LAC) in the postharvest loss field. IGAD/LAC country studies pointing up the seriousness of these problems in Central America and some possible solutions were presented to the Central American Ministers of Agriculture at a meeting in Honduras in September, 1977. This was followed by a Central American Conference on Postharvest Losses held in San Jose, Costa Rica, on November 9-11, 1977, attended by representatives of Costa Rica, El Salvador, Guatemala, and Honduras in addition to personnel from IGAD/LAC, AID, IBRD, the Consultative Group for Food Production and Investment (CGFPI), IDB, UNDP, CIDA, IICA, FAO, the Central American Bank (CABEI), the Tropical Products Institute, CYMMYT, and the Tropical Agricultural Center for Investigations and Teaching (CATIE). AID missions in in Central America and Panama were kept abreast of these developments and were requested to cooperate with host-country officials or agencies in helping to reduce postharvest losses. In June 1978, the U.S. approved an IDB $12.5 million soft-term loan for a second stage basic grain marketing and storage project for Central America in collaboration with CABEI. (None of this is mentioned in the AAG draft report).

b. Partially as a follow-on of the San Jose Conference, IGAD/LAC (with AID financing) is presently developing two training courses in postharvest technology for use this calendar year. One is to be designed for local government extension workers. The second is to primarily involve Latin American University personnel of the various countries to help incorporate

"postharvest loss technology" into the agricultural university curricula of their universities.

c. The past and planned cooperative research and extension work between AID and the Denver Wildlife Research Center (DWRC) on reduction of losses caused by vertebrate pests was not adequately considered. The LAC Bureau is presently preparing a project paper in cooperation with the DWRC to develop technologies which may be used by participating countries to reduce crop losses by rodents and other vertebrate pests both prior to harvest and during postharvest maintenance on small farm units. At least two regional field units - nuclei of outreach activity - are proposed to be established in Central America and the Caribbean. This three year project is slated to begin in early FY 1979.

d. Three Central American AID missions are presently preparing project papers in which postharvest loss reductions play a major role. El Salvador has established a national committee to work on postharvest loss reductions.

e. The Development Support Bureau (DSB/Nutrition) has contracted a consultant firm (L.I.F.E.) to help develop a methodology to evaluate postharvest losses on a worldwide basis.

SUMMARY: The LAC Bureau believes that the AAG/W review of our activities in the postharvest loss field has omitted many crucial elements of what this Bureau and DSB are doing in this area. I would suggest a series of meetings between the LAC/DR agricultural staff and the AAG staff as well as between AAG and DSB to fill in these voids before the final report is issued.

LIST OF REPORT RECIPIENTS

Assistant Administrator, DSB	5
Assistant Administrator, NE	5
Assistant Administrator, AFR	5
Assistant Administrator, ASIA	5
Assistant Administrator, LA	5
Assistant Administrator, PPC	2
Auditor General	1
AG/PPP	1
AG/IIS	1
AG/EX (C&R)	12