

PROJECT EVALUATION SUMMARY (PES) - PART I

3670114(5)
 ID AAD-038-61

1. Project Title Integrated Cereals	2. Project Number 367-0114	3. Mission/AID/W Office USAID/Nepal 15
	4. Evaluation Number 3670114001502 FY 1978-001 Second Regular Evaluation	

5. Key Project Implementing Dates A. Project Agreement Signed FY 76 B. Final Obligation FY 79 C. Final Input Delivery (Anticipated FY 1981)	6. Estimated Project Funding A. Total \$9,320,000 B. US\$5,000,000	7. Period Covered by Evaluation From: Oct. 1977 To: Sept. 1978 Dates of Evaluation Review: Sept. 8-14, 1978
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8. Action Decisions Approved by Mission

A. Action Decisions Reached at Evaluation Review including items needing further study	B. Office or Unit Responsible for Action	C. Date Action to be completed
(SEE PAGE TWO & THREE)		

9. Inventory of Documents to be Revised per Above Decisions <input type="checkbox"/> Project Paper <input type="checkbox"/> Implementation Plan <input checked="" type="checkbox"/> Other (Specify) Contract <input type="checkbox"/> Financial Plan <input type="checkbox"/> PLO/T <input type="checkbox"/> Other (Specify) <input type="checkbox"/> Logical Framework <input type="checkbox"/> PLO/C <input checked="" type="checkbox"/> Project Agreement <input type="checkbox"/> PLO/P	10. Alternative Decisions on Future of Contract A. <input checked="" type="checkbox"/> Continued Project Without change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project
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11. Signatures: Project Officer <i>John R. Wilson</i> Signature: Typed Name: John R. Wilson	12. Mission or AID/W Office Director Signature: <i>Julius E. Coles</i>
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Evaluation Officer Type: Donald L. Long <i>D. L. Long</i>	Typed Name: Julius E. Coles, A/Director Date: 12/14/78
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8 Action Decisions

A. Action Decisions Reached at Evaluation Review including items needing further study	B. Offices or Unit Responsible for Action	C. Date Action to be completed
<u>Construction and Other Research Station Improvements</u>		
(1) Accelerate construction activity and re-schedule all delayed work for FY 1979 completion at the coordinated research sections located at Rampur, Patwanipur, and Bhairawa and other construction at Datta, Jorla, Jizi, Kakanj, Daman, Daurhoda	IADS/HMG	September 30, 1979
(2) Provide training facilities at Bhairawa Research Station in accordance with the Project Agreement.	HMG/IADS	Plans: April 1979
(3) Improve Irrigation facilities and Land developing at Bhairawa.	HMG/IADS	January 1979
(4) Devise plans for constructing farming systems office facilities and training facilities at Khumaltar for presentation to mid-project review.	HMG/IADS	March 1979
<u>Commodities</u>		
(5) Review commodity program so as to include the needs of the Farming System program	HMG/IADS	Commodity workshops: Maize - Jan. 1979 Rice - Nov. 1979 Wheat - Aug. 1979
(6) Ensure after the arrival of commodities on order are stored properly until installed.	IADS/HMG	September 1979
(7) Prepare a list of needed items and condition of equipment for laboratories at the research stations.	Committee from HMG & IADS	February 1979
(8) Prepare list of needed items and condition of farm machinery and farm equipment already available at the research stations.	Division of Agriculture Engineering	February 1979
<u>Planning and Programming</u>		
(9) Review and update the ICP five year action plan.	IADS	April 1979

A. Action Decisions Reached at Evaluation Review including items needing further study	B. Offices or Unit Responsible for Action	C. Date Action to be completed
(10) Assign coordinated status to the Farming Systems program	HMG	September 1979
(11) Strengthen linkages between ICP and Research Divisions at Khamakhar	IADS/HMG	September 1979
(12) Develop plans for a highland research farm for presentation to mid project review.	HMG	March 1979
(13) Prepare budget including increased emphasis on minor crops in the cropping system	HMG/AID/IADS	February 1979
(14) Develop plans for a foundation seed multiplication farm for presentation to mid-project review.	HMG	March 1979
Staffing		
(15) Ensure that a full time wheat consultant is assigned to the Bhatnawa Research Station.	IADS	February 1979
(16) Ensure that a full time maize Specialist is assigned to the Rampur Research Station.	IADS	February 1979
(17) Establish posts for four HMG rice production specialists, four wheat production specialists and five farming systems site coordinators positions for assignment to four zones in Nepal.	HMG	July 1979
(18) Provide four PCV's and assign to regional headquarters to assist in training farming systems site coordinators and extension personnel on use of mini-kits and production techniques.	AID/PC/IADS/HMG	March 1979
(19) Upgrade station development and operation of all coordinated research stations and others involved in project and have agricultural engineers trained by an IADS consultant and a PCV.	IADS/HMG/PC	December 1978

PROJECT EVALUATION SUMMARY (PES) PART II

13. Summary

The project was provisionally approved for further development at the end of June 1975 and the contract between IADS and HMG was signed in September 1976. After two year's activity, the project continues to proceed along the lines given in the Project Paper. The mini-kit and production kit programs have been greatly expanded over the previous year. The research programs are progressing satisfactorily - releasing two new varieties of maize and one each in rice and wheat for commercial production. The cropping systems program is now underway and is effective in starting a conversation between the researchers and the farmers and in introducing new varieties and new technology into the farmers' farming systems. More of the project technicians work time (47 to 49 percent) has been shifted to Hill Agriculture. Equipment procurement is progressing satisfactorily and the training program (participants) is improving although the project is having problems in getting trainees admitted on time. With the return of participants, HMG staffing has improved slightly over the past year, still 14 out of 49 gazetted positions are not filled. Two of seven IADS contract positions remain vacant - wheat agronomist and maize agronomist - and only two out of four authorized PCV's are presently involved with the Project. The construction program is behind schedule, due in part by national shortages of cement and in part by the failure of the project to employ an engineer to expedite and coordinate the work.

The evaluation team concluded that the project is following along the lines presented in the Project Paper and the overall progress remains good.

14. Evaluation Methodology

This was a regular annual evaluation and dealt with a specific set of criteria outlined in the Project Paper. A list of items dealing with management aspects of project operations and logistical support was given to each evaluating official as guidelines for this evaluation. The Project Paper Outputs and Inputs items were also included in the list. Four crop coordinated research stations and three farming systems research sites were visited by the evaluation team.

Data for this evaluation was taken from the Department of Agriculture and IADS Project files. Data included numbers of personnel assigned to the project, numbers undergoing training in-country and other countries, kinds of research trials conducted at the three major research stations (rice, maize, wheat), farmers field trials conducted, number of research/production kits distributed, status of commodity purchase orders and construction costs for each of the three stations. No extensive effort was made to analyze these data in depth. However, data along these lines were available from Department of Agriculture and IADS records and indicated substantial production increases in mon) crop, cropping intensity and multiple cropping trials. Except for the rupee-funded construction, essentially all other quantifiable second year targets were met.

A list of key participants in the evaluation is as follows:

For HMG: Mr. N.K. Adhikary, Secretary, Ministry of Agriculture
Mr. S.B. Nepali, Director General of Agriculture
Mr. A.M. Pradhanang, Deputy Director General, Crops
Mr. A.N. Bhattarai, Deputy Director General, Ext. & Training
Mr. K.B. Khatri, Ministry of Finance, Foreign Aid Division
Mr. P.L. Chitrakar, National Planning Commission
Mr. G.R. Rajbhandari, Maize Coordinator, Rampur Station
Dr. P.S. Rana, Wheat Coordinator, Bhairawa Station
Dr. B.B. Shahi, Rice Coordinator, Parwanipur Station
Dr. S.N. Lohani, Cropping Systems Coordinator, Khumaltar
Mr. S.B. Mathema, Cropping Systems Socio-Economist, Khumaltar

For IADS: Dr. A.H. Moseman, IADS/NY
Dr. D.S. Athwal, IADS/NY
Dr. W.H. Freeman, IADS Project Supervisor
Dr. A.H. Manzano, Cropping Systems Agronomist
Dr. M.G. Van Der Veen, Agriculture Economist
Dr. M.H. Heu, Rice Breeder
Dr. E.R. Perdon, Production Training
Dr. R.F. Schroeder, Sociologist - Anthropologist

For USAID: Mr. S.H. Butterfield, Director
Mr. J.R. Wilson, Chief, Agriculture Division
Mr. S.L. Pitts, Asst. Chief, Agriculture Division
Mr. R. Potocki, Area Contract Officer
Mr. D.L. Long, Controller/Evaluation Officer

54

15. External Factors

There have not been any significant changes in project setting. Project assumptions given in the logical framework continue to be valid except as mentioned in the previous evaluation. There is one assumption (no. 8 in the "goal" section) which will from time to time come under pressure as rains, floods or droughts temporarily can and will have adverse effect on production. Other than item 8, because of HMG's concern for improvement of agriculture and welfare in the Hillis and continued support for the Texal programs, the assumptions' seem to be valid.

16. Inputs

The number of on-farm trials utilizing mini/production kits has been substantially in excess of planned target levels. Equipment/Machinery procurement is now on schedule but is expected to create a storage problem as the arrival of the material is well ahead of the building construction program. Due to national shortage of cement and contractor's financial difficulties, the construction program has lagged behind the planned schedule. With the Department of Agriculture placing a higher priority on procurement of cement, the previously programmed construction is expected to be completed during FY 1979.

Participant training programs are on schedule and all training is planned for completion prior to the end of project.

The IADS specialist positions (Wheat Breeder and Maize Agronomist) have remained vacant for the past year. Although consultants have given seasonal assistance, the absence of full time specialists has hampered research progress somewhat.

Although two of four PCV's have departed (illness), the Peace Corps contribution to the ICP program by assisting in conducting farmers trials and by being involved in the farming systems programs is excellent.

HMG has filled the top positions with technically competent personnel but is having difficulty in filling field positions as one-fourth of the scheduled posts have not been filled. The return participants is expected to give relief to this problem.

During the period covered by this evaluation, it was evident that more emphasis has been placed toward upgrading the ICP program in the Hills. Increased numbers of mini-kit packages were distributed to the Hills and more of the ICP specialists' work time had been devoted to the Hills. Storage facilities had been constructed at four high elevation stations and with Hill farmers cooperating, the farming systems programs were being implemented. Overall, the current input level appears to be adequate.

17. Outputs

A. Specific Comments on Outputs Listed in Project Paper

1. "A system to combine research and extension functions at the regional level is designed and operational."

Two systems of on-farm research and evaluation have been developed—one for transferring "component" technology and the other for transferring a cropping systems package. The farmer is brought into the activity by the commodity research programs. They are planned with the Regional Directors and conducted on farmers' fields. The use of the mini-kits is set up and supervised with the help of extension personnel. The second, "cropping systems research" is conducted on farmers' fields in selected sites in each development region. Extension personnel are directly involved in this research which involves pattern of production, farmers field trials of varieties, variety cum fertilizer, pest management trials, mini-kits, multiple cropping and experimental production plots. These sites generate research findings on farmers fields which are applicable with small modifications to similar farmer situations. The sites serve as demonstrations to extension personnel and other farmers and as training centers for expanding the findings to other areas.

2. "First diagnostic team studies and reports on farming systems' pressure points and research priorities."

The socio-economic "key informant interviews" at five selected centers in the country sampled farming situations in these areas and established guidelines for agronomic and socio-economic research and research priorities.

"Catalogue of IITA farming system models including complete description."

1111 farming systems were identified at the five cropping systems sites and major systems characterized by elevations, soil, water availability, season, crop, and the role of livestock in the system.

4. "Regional directorate training programs for Crop Production Specialists. (Note: Three groups of six each in maize/wheat, rice and multiple cropping to be trained at International Agriculture Research Institutes. Returned trainees will form nucleus of in-country training programs.)"

In addition to those trained in 1977, two more are undergoing training in wheat production, five in maize production and three in multiple cropping. These participants are key personnel at the cropping systems sites as site coordinators and in the commodity production

for
programs as organizers of training programs and/monitoring
of on-farm trials and mini-kits on a regional basis.

5. "Department of Agriculture and Regional Directorate in-country training programs for crop-specific JT/JTAs."

During the second year of the project, specially arranged training programs, in addition to regular programs of the Department of Agriculture, trained 340 JTs, JTAs and ADGs. Most of these programs were in maize and wheat. Sixty percent of the trainees were from DII districts.

6. "In-service retraining for all JTs and JTAs (about four weeks duration)"

Eight in-service retraining programs were conducted during FY 78 in which 772 junior technicians (JTs) received training. This number of trained personnel did not meet the cumulative target of 400. Regional requests for increased number of training programs should bring the FY 1979 target more nearly on track.

7. "On farm trials of newly adapted varieties and technologies conducted and successful innovations demonstrated."

The FY 78 target of 4,800 research/production trial plots was again greatly exceeded. On-farm trial plots and

mini-kits included 3,500 for wheat, 6,778 for maize and 11,200 for rice. Mini-kit trials consist of already released crop varieties and promising new varieties yet to be released. Farmer field trials in which research personnel were involved were conducted on approximately 820 farmers' fields. The other kits and demonstrations were handled primarily by extension personnel.

8. "Collection and testing program for existing varieties of minor crops."

Evaluation of local varieties of minor crops was conducted at the five cropping systems sites and at research stations, where local wheat and rice varieties numbered several hundred and minor crops such as chickpea, finger millets, barley and buckwheat were in fewer numbers.

9. "Economic and technical analyses and evaluation of on-farm trials."

The lack of trained staff and the lack of strong administrative support produced insufficient economic data during early FY 1978. Nepalese personnel recently trained in collecting/entering data in a newly developed Nepalese-English monitoring form are now gathering information on harvest results of the first cycle of a years cropping pattern. The first complete cropping cycle analyses as planned in the Project Paper will be produced late in FY 1979.

10. "Development of technology packages for irrigated and dry land conditions to complement new varieties "

Teral trials of rice, winter maize and wheat provided a basis for a complementary technology to new varieties. Development of a technological package for the hills is underway and will be realized in cropping systems sites in the 1978-79 season on an adaptive trial basis.

11. "Small quantities of seed of newly developed, selected, and tested varieties of rice, maize and wheat (as well as minor food crops) that outperform traditional varieties in hills as well as Teral and for small farmers as well as large farmers "

Seeds of new varieties were distributed/^{as mentioned} in item 7 above. Minor crops were also distributed, including chickpea, lentil, linseed, barley, and soybeans.

12. "Interim system designed for development of quality seed production processing, and distribution of newly released seed varieties." The mini-kit program seeks to achieve widespread distribution to fit new varieties into the existing system of farmer-to-farmer spread while experimental production and production demonstration plots brings larger quantities of seed close by to feed into this system. Once established, seed farmers (or seed village) would

be the channel through which the Agriculture Inputs Corporation would pass certified seed for the production of improved seed.

13. "Temporary, experimental seed production and processing plant set up in Far Western Development Region with permanent storage near by."

Plans were developed but due to lack of bids the construction had to be readvertised. Orders for part of the equipment have been placed.

14. "Trained personnel."

Six additional candidates were selected for M.Sc. and two for Ph.D. training. Out of those selected for FY 78 departure, four M.Sc. and two Ph.D. candidates were able to depart for their training program. The short-term training program is ahead of the planned Project Paper training schedule whereby the returned participants assist in overcoming shortage of trained personnel.

15. "Upgraded Crop Coordinators Stations."

Construction was delayed because of a national shortage of cement. Even so, Parwaipur was 75 percent completed, Bhairawa 65 percent completed, and Rampur 50 percent completed by the end of year two. IADS has arranged for a consultant to give on-the-job training to an agriculture engineer in land leveling, irrigation and drainage programs and an ex-senior officer has been employed to expedite the construction program.

16. "Upgraded outreach stations in the Hills."

Four storage buildings had been programmed in FY 1978 and two more for FY 1979 construction on outreach stations. Lack of housing continues to present a problem in filling research personnel positions at six stations.

17. "Research on environmental, economic and social aspects of project."

Socio-economic studies were initiated during the year which identified in detail "what" farmers are doing while the "why" of rice varietal preferences were explored in two sites.

B. General Comments

The amount of in-service training (over 300 personnel trained) and the number of on-farm trials utilizing research/production kits (27,000 mini-kits distributed in 1977-78) continue to be substantially in excess of planned target levels for the first two years. The planned long term training program (8 degree programs completed, 5 continuing, 6 candidates selected and 7 new candidates being selected) and procurement of equipment are now on schedule. The lag in construction, due to national shortage of cement, continues to be a problem and will create another temporary problem in lack of storage and utilization of equipment when it arrives. The Ministry of Agriculture is placing high priority on procurement of cement for research station construction and have employed an "expediter", all of which may enable construction problems to be resolved in 1979.

Cooperation between the Department of Agriculture and the contractor continues to be close and effective. A recent HMG request for four additional Peace Corps agronomists is an indication that the PCV input continues to be working out well.

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As a result of a series of discussions on improving the wheat research program, it was concluded that: (1) an off season nursery in the Hills was needed to produce a second crop of wheat for breeding purposes, and (2) a high elevation seed farm was required to relieve the coordinated research stations of producing foundation seed for these areas. Both conclusions have been assigned to investigative study groups during third year activities.

The cropping systems program is receiving strong consideration for additional staffing and elevation to a coordinated program status. Overall, the current input and output levels appear to be adequate.

13. Purpose

The Project Paper cites the purpose as follows: "To assist in strengthening the Ministry of Food, Agriculture, and Irrigation's (MFAI) capacity to (a) "generate improved production technology and inputs for the major foodgrain crops and related cropping systems, and (b) transfer that technology to farmers in such a way that it is readily accepted."

Progress toward Field of Project Status statements cited in the Project Paper is commensurate with what would be expected from the second year of activity. The mini-kit/production kit distributors are further ahead than had been anticipated through cooperation and support from the International Research Institutes. The germ plasma received from IRRI and CIMMYT enabled early releases of four new high yielding cereal grain varieties by the research team for mini-kit production. Additional varieties have been identified and are being programmed for mini-kit and production kit testing for farmer acceptance prior to release as production varieties.

A lengthy discussion concerning closer cooperation within the Department of Agriculture / ^{USAID's} Agriculture Division and Project personnel resulted in plans for a meeting of the division heads, the coordinators and the project advisors to be held to develop reasonable working relationships between the groups. It was also pointed out that there is a special relationship between the Farming Systems program and all other programs because they mutually support each other and "farming systems" is a multi-disciplinary program.

Progress toward the development of a program for measurement of technology inputs and improved production technology reaching the farmer got underway during the second year of the project. These measurements will be useful in evaluation of project work in the future.

19. Goal

The Project Paper cites the goal as follows: "To increase the average productivity of Nepal's foodgrain cropping systems, particularly on small hill farms, in order to address the national objectives of increasing foodgrain production, improving income distribution and raising the nutritional status."

The Hill farmers, Terai farmers and regional extension officials are cooperating in the mini-kit, production kit and farming systems program. The number of outputs and farmers' response to their research programs can be measured with reasonable accuracy. Block 17 gives the status of the outputs listed in this project. There are indications of increased agricultural production in localized areas covered by project activities. However, it is too early in the project's life to measure increase attributable to project influences. Success or failure to improve income distribution, to raise nutritional status, and to meet overall foodgrain production goals will likely begin to be measurable in the last year or two of the project as distribution of the research/production kit programs will be sufficiently widespread.

The Integrated Potato Program is one donor effort along lines similar to the Integrated Cereals Project. This program is fairly recent in origin and data on production and welfare impact from this project is correspondingly limited.

The British Gurkha Employment Reintegration Training Scheme

Conduct research trials organized by the TCP commodity
programme and participate actively in the commodity workshops.

Integrated Hill Development Project Program

This program encompasses two Hill Stations, Kavre and Jiri, where commodity trials are conducted. Kavre has been identified by CIMMYT and HMC specialists as a site for evaluating triticale which may have greater production potential than in wheat at these elevations and soil conditions. IDDP personnel participate in the commodity workshops.

The Agriculture Development Committ. (ADC)

ADC revised work plans of the HEM/IDDP/ADC project will provide complementary support to the socio-economic research aspects of the cropping systems program.

Beneficiaries

More than 20,000 farmers in 54 districts throughout Nepal are receiving improved seed through multiplication and production kit programs. Also, the farming systems program is focusing research on small farmers problems/ is already showing **beneficial** effects to cooperating farmers.

21. Unplanned Effects

The knowledge gained through the farming systems program concerning the importance small farmers gave to feeding grain to lactating animals and to some work animals has added new dimensions to grain production requirements. Also, to meet the demand for improved seeds of minor crops, increased emphasis for expanding the research program in the minor crops field is now being explored. It was also found that farmers learned from the on-site farming systems program and were enthusiastically demanding that they be allowed to participate. There was no awareness of any other impact or result from the second year ICP program that should create any change in project design or execution.

22. Lessons Learned

As construction, participant training and commodity procurement problems are being solved, the Mission believes the ICP program progressed satisfactorily. To other countries or colleagues it is recommended that early introduction of the mini-kit and production kit programs be initiated - thus giving farmers service and early access to new, promising crop varieties. To strengthen the farming systems program, it is recommended that livestock and minor crop research be given strong emphasis at initiation of the program.

Extension personnel and research personnel belong to the same department. This enables a closer and more effective collaboration at the farmer level such as that experienced in the farming systems research sites.

It must be strongly emphasized that prior to giving a contract, a host country should be assured that the contractor has the capability to supply competent technical personnel from initiation through termination dates of the project.

23. Special Comments

Many aspects of the Integrated Cereals Project are a continuation of the Foodgrain Technology Program of the early 1970's. The ICP program is more refined, i.e. the research stations are now designated as coordinated crop research centers (Rampur - maize, Parwanipur - rice, Bhairawa - wheat and Khumaltar - cropping systems) where better refined research can be conducted; instead of farmers working with extension and research personnel conducting demonstrations in their fields, actual research is being conducted; not only are Terai farmers receiving support, more emphasis is being placed toward assisting Hill farmers; more seeds of promising, newly released crop varieties are being distributed and welcomed by farmers throughout Nepal; more technical information and assistance are being received in regard to all facets of agriculture -- through training programs and on-the-job supervision. The cropping systems program, experiencing some earlier problems, got well underway during the second year of activities and data collected will be useful to

521

research personnel in conducting programs relevant to farmers multiple cropping systems. Although construction and IADS staffing problems continue to exist the project has overcome difficulties experienced in the first year of activities and appears to be extending strong efforts to achieve project goals by the end of the project.