IN-22770 PD-AAP-033
931-0473/15

CLASSIFICATION

PROJECT EVALUATION SUMMARY (PES) – PART I

Report Symbol U-447

1. PROJECT TITLE	2. PROJECT NUMBER	3. MISSION/AID/W OFFICE
Control of Vertebrate Pests	931-0473	S&T/AGR

4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)

Denver Wildlife Research Center, Denver, CO.

☒ REGULAR EVALUATION ☐ SPECIAL EVALUATION

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING		7. PERIOD COVERED BY EVALUATION	
A. First PRO-AG or Equivalent	B. Final Obligation Expected	C. Final Input Delivery	A. Total	$ 7,136,487	From (month/yr.)	04/05/67
FY 67	FY 82	FY 83	B. U.S.	$ 7,136,487	To (month/yr.)	12/31/82
					Date of Evaluation Review	02/8 - 15/84

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
A. The revision of the successor project's PP (and for its extension) will provide for even more socio-economic and economic analysis than used in this project.	S&T/AGR/AP, H. R. Shuyler	08/30/84
B. The revision of the PP referred to above will emphasize the continued need for extensive multidisciplinary R&D, as well as institution building, training, extension, other technical assistance, network coordination, and other information sharing.	"	"
C. Provision for using the 11 listed lessons learned will be made in the successor project PP revision.	"	"

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

- ☐ Project Paper
- ☐ Financial Plan
- ☐ Logical Framework
- ☐ Project Agreement
- ☐ Implementation Plan e.g., CPI Network
- ☐ PIO/T
- ☐ PIO/C
- ☐ PIO/P
- ☒ Other (Specify) Successor projects PP revision
- ☐ Other (Specify) _____

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT Successor

- A. ☐ Continue Project Without Change
- B. ☒ Change Project emphasis to research & technology transfe from technology transfer
- C. ☐ Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

S&T/AGR/AP:H.R.Shuyler, Proj. Mgr. 2/23/84
S&T/AGR/AP:J.M.Yohe, Chief 2/27/84
S&T/AGR:J.A.Boyer, Prog. Anal. 2/24/84
S&T/PC:E.Roche 2/13/84
S&T/PO:F.R.Campbell

12. Mission/A.I.D.W Office Director Approval

Signature

Typed Name
A.M.Bertrand, Director, S&T/AGR

Date
2/24/84

AID 1330-15 (2-78)

13. Summary

The need for increased food production has led to an increased emphasis on crop and animal protection. Vertebrate pest management is a very important element of crop and animal protection. As a result of the AID funded project, the miniscule knowledge of vertebrate pest control (VPC) in LDCs in 1967 has been expanded tremendously by DWRC.

VPC programs can boast of significantly improved success in any of the 28 countries in which this DWRC project has strengthened this aspect of crop and animal protection. Also, new methodologies are available for assessing the reduction in losses being achieved. The most striking successes, achieved where the effort has been greatest, are to be found in 13 countries of Latin America and the Philippines. Significant reduction in vertebrate pest losses has also occurred in Bangladesh, Colombia, Dominican Republic, Haiti, and Uruguay.

Based only on situations where it was possible to assess present-day benefits, the project efforts have paid off bountifully. The 1982 benefits were 29 times as great as the total cost to AID of DWRC's work in VPC from 1967-1982.

Despite the overriding success of the project, even greater use of economic analysis is needed in the successor project. The successor project will continue to have even more research problems that will need the multidisciplinary approach which has proved so essential to date.

14. Evaluation Methodology

The project was evaluated at this time, after its termination, using the Project Paper, work plans, DWRC documents, including the draft terminal report, and previous reviews and evaluations. The objective was to analyze comprehensively the project's planning, organization, operation, budgeting, and the various components: research, institution building, technology transfer and other technical assistance, training, extension, information sharing, and other outreach. The purpose of the analysis was to improve future project management. The evaluation was conducted by Harlan R. Shuyler, AID/S&T/AGR/AP, Project Manager.

15. External factors

Unchanged factors. In the more than 15 years of this project, many external factors remained basically the same. For example, the need for a greater understanding of the losses resulting from vertebrate pests and the need to reduce these losses is the same as in 1967. The demand for development assistance in vertebrate pest control (VPC) has not decreased despite increased capabilities in such LDCs as Bangladesh, Colombia, Dominican Republic, Haiti, Mexico, Nicaragua, Philippines, and Sudan. Indeed, there seems to be a trend of increased demand for this DWRC project.

Host government priorities continue to place high on the list the need to reduce pre- and postharvest losses due to pests; among various types of pests, the quantity of vertebrate pest losses ranks quite high and in many instances are higher than losses due to insects. Initial requests for assistance from LDCs, however, mostly still come after unusually large-scale vertebrate pest damage to crops.

Factors changed by the project. The successful operation of this project has brought some changes in external factors. For example, the Philippines, which has developed national capabilities in VPC, provided services to other nations. Personnel of 15 nations have received: 1) graduate training and/or, 2) on-the-job training in operations extension and/or research.

Factors changed by other kinds of development assistance. Success in other areas of development assistance has made changes also. The trend toward multicropping over the seasons and monocropping over larger areas, resulting from the concepts extended in connection with high-yielding varieties, leads to greater vertebrate pest problems and requires new pest management techniques.

Other changes. The French have gradually reduced development assistance leading toward VPC. In Tanzania, the Danish began their first VPC work for LDCs in the last year of this project.

16. Inputs

DWRC did not encounter serious problems with respect to the delivery of inputs. This may change in the successor project with its reduced budget. There were 224 consultative visits to 52 countries utilizing 4,030 person days. Seven in-country projects were established. Extensive training and research was guided and conducted in and for many LDCs. Extension activities were initiated. Pertinent VPC documents from around the world were sought and shared with those thousands requesting them.

17. Outputs

Development of methods. Hundreds of output achievements increased the opportunity for improved VPC over the years. One output target was to develop practical, low-cost control methods for specific situations. Results of meeting this target are shown below.

Region or Country	Crop	Pests Controlled	Actual (A) or Potential (P) Loss Reduction	Annual Loss Reduction Value ($ Millions)
Colombia	coconuts	rats	P	10
Latin America	cattle	rabid vampire bats	A	270
Philippines	coconuts	rats	P	140
	rice	rats	A	14
Global	emerging grains	birds	P	100

Adaptation of methods. The output target to adapt existing methods and technology to specific agricultural situations resulted, most notably, in gains in Bangladesh. Adaptation of earlier development assistance conducted elsewhere resulted in reducing the loss of wheat to rats in Bangladesh. The annual value of this loss reduction is $10 million.

Progressive improvement of implementation programs. The DWRC project in reaching this output target among many other things notably achieved:

a) the development of marking agents for determining movements of vertebrate pests;
b) the development of numerous electronic devices, including pest-borne radio transmitters, for monitoring field research;
c) full studies of numerous rodenticides and avicides through laboratory evaluation and field development;
d) the development of methods for assessing vertebrate pest crop losses.

Development of indigenous capabilities. In striving for the output target, sixteen programs dealing with VPC have been established in LDCs by DWRC, and 12 others strengthened. About 250,000 people received training in some aspects of VPC as a result of this project. Approximately 150 LDC individuals received specialized short-term training at DWRC. Forty persons from 11 countries received graduate degrees as a result of the project.

Persons trained by the project now direct pest control programs broader than the VPC work of the project. Several thousand scientific publications have been supplied to requestors in LDCs. In a recent year, 260 requests for information on various VPC subjects were received.

Development of long-term institutional support. Related to the previous output target, achievement to be noted in the long-term in this output area is that of continuing rabid-vampire bat control programs in 13 Latin America countries, where all external assistance was completed in 1978, and the continuation of the program in the Philippines from 1968 to the end of the project. (This work has since been completed and the work by nationals is continuing.)

18. Purpose.
The purpose of this project was to develop safe, effective and economical vertebrate pest control methods that are appropriate for use by small farmers and acceptable in the broader context of agricultural development and enviornmental protection.

End of Project Status (EOPS). There was significant, continued progress toward the above stated purpose. The EOPS is defined on an individual country basis. This ranges from the situation found in Mexico to that of Haiti and that of Peru. In Mexico, the field station for study of management of the problem of rabies-infected vampire bats was terminated; its mission had been accomplished. The control program is ongoing. In Haiti, the work of the field station is just well underway. Much remains to be accomplished, but budgets are already being approved with difficulty.

In several countries, the EOPS is between that of Mexico and Haiti. In Peru, the USAID Mission has only made use of DWRC to plan toward specific concrete efforts in improvement of VPC. This AID/W project with DWRC, at the minimum, furnished backstopping for all of these efforts and all other development assistance of AID in VPC.

19. Goal

The project goal is to increase the available human food supply in developing countries by reducing the risk of severe losses to agriculture caused by bats, rodents, other mammals, and grain-eating birds. The available human food supply has been increased significantly; this goal has been achieved.

By eliminating paralytic rabies in livestock in many LDCs in Latin America, as noted above, livestock valued at $270 million are saved annually. These additional animals improve the local diet, mostly. Since 1976, rice losses due to rats in 2 million ha surveyed in the Philippines have been reduced to 1/7 of that experienced in earlier years when improved rat control systems were not available. This savings helped the Philippines achieve self-sufficiency in rice. These are but two of several dramatic examples available from this DWRC project.

20. Beneficiaries

This project generated a positive benefit stream accruing to the cooperating countries' small farmers. On balance, the technologies developed were labor-intensive and generally well-adapted to dissemination by extension services to small farmers. Additional benefits accrued to urban consumers as food prices tended to stabilize as a result of the increased food supplies generated.

The project had an impact upon income distribution. Farmers invested their limited land, labor, and other resources in recommended VPC as a part of technological farming packages and received an increased return from their efforts rather than losing a portion of their produce to vertebrate pests.

As noted earlier, technologies resulting from this project are being and will be used in LDCs. The successor project is expected to increase the degree to which this is true.

21. Unplanned Effects

The ecological and socio-economical effects have been as planned. No unplanned, undesirable effects have been observed.

A desirable unplanned effect is the generally extremely positive attitude and response of the government of host countries to the project. The Government of Haiti for example, has scheduled valuable foreign exchange and internal resources for the project there. They expect a high payoff for funds invested. The Government of the Philippines, on the other hand, during several years of slowly accumulating data, maintained necessary inputs in anticipation of high returns for their farmers and the economy. They were justified.

22. Lessons Learned

a) This project could serve as a model for the development of projects of a similar nature.

b) A constantly shifting balance between applied research, per se, training, institution building, extension and other technical assistance and technology transfer activities as done in this project is essential to successful development assistance for improved VPC.

c) Technical assistance in VPC almost without exception contains elements of applied research and may consist solely of this type of effort.

d) DWRC insistence on early, effective involvement of concerned LDC personnel in all planning and implementation leads to an effective use of funds for VPC improvement.

e) The multidisciplinary team approach as practiced by DWRC contributed very significantly to the success of the project and was important to the provision of adequate technical backstopping of its world-wide activities; this approach is also considered to have been more economical than alternative methods of providing these services and more helpful to USAID Missions--the same approach is needed in the successor project.

f) The mutual complementarity of the international programs and the U.S. domestic programs of DWRC was a factor contributing to the success and the low cost of the project.

g) Since vertebrate pest management is a specialized field and encompasses a wide variety of complex problems world wide, a long-term, centrally funded program is conducive to continuity and successful implementation of project mandates.

h) Well defined memoranda of understanding between AID/W, USAIDs, host countries and DWRC are essential to project success in any particular LDC; they must describe the project objectives and each agency's responsibilities clearly.

i) Country project linkages should include one with a national plant (and/or animal) protection agency in addition to a local research organization or university in order that technology can be transferred on a national basis more quickly.

j) Improvement of vertebrate pest management involves not only development of safe and effective control methods; it also includes other important considerations such as ecological factors, pest species variability, environmental assessment, and socio-economic analysis to know that the techniques are also truly available and acceptable.

k) Development assistance for VPC in any country can start on a small scale without overburdening any part of the government system; VPC work can be expeditiously and "painlessly" expanded as is needed and feasible.

23. Special Comments

Conveying "results" in a "squeezed" summary. It is difficult to summarize the 16 years of DWRC's work into a few pages and convey the extent of its effort and achievements. All of the technological accomplishments are summarized above into 9 subjects. These 9 subjects encompass 65 distinctly separate ways in which VPC knowledge has been significantly advanced by the project. Most of the 65, originally subdivided over subject matter or space, can only be conjoined in hindsight. Several of the 65 achievements were the result of 2, 3, or even 4 years of work.

Knowledge availability. Because the work was being done by competent, conscientious scientists, these activities have resulted in 275 scientific publications. This is a great achievement in itself. Mankind has learned of no better way to make added knowledge available for anyone that is interested. LDC nationals share credit for this with DWRC. Other LDC nationals receive these publications from DWRC upon request.

Need for economic analysis. An even greater use of socio-economic and economic analysis should be made in the successor project. These data are important for project justification. These data are also needed to motivate farm families to participate in research and to utilize the resulting solutions. Such data are a vitally important factor in prioritizing alternative solutions. They are also helpful in determining the most useful lines of research.

Future R&D requirements. Depredations by vertebrate pests to our food and fiber are a problem of continuing global proportions. Extensive R&D will be required to continue developing innovative approaches. We are now in a period of transition, building on research achievements and testing discoveries, while using knowledge of the ecology (both biologic and social) of the various pests. DWRC recognized this transitional period, and building upon it, has added to its international stature in this science. VPC is a most promising field for international scientific cooperation. It is replete with a diversity of problems to be solved. The ecologies of the tropics are unique, and there are proving to be many short paths between fundamental and applied research on the one hand and practical application on the other.

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