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PROJECT APPRAISAL REPORT (PAR)

PAGE 1

1. PROJECT NO. 931-11-130-050-73	2. PAR FOR PERIOD: October 1975 to April 1977	3. COUNTRY TA Bureau	4. PAR SERIAL NO.
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5. PROJECT TITLE

Feed Information System

6. PROJECT DURATION: Begin FY <u>75</u> Ends FY <u>77</u>	7. DATE LATEST PHOP 8/12/74	8. DATE LATEST PIP -	9. DATE PRIOR PAR December 24, 1975
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0. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$ <u>340,000</u>	b. Current FY Estimated Budget: \$ <u>250,000</u>	c. Estimated Budget to completion After Current FY: \$ <u>125,000</u>
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME	b. CONTRACT, PASA CR VOL. AG. NO.
Utah State University	AID/ta-C-1159
Logan, Utah 84322	

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HCST		
	X		1. Project statement for USAID funding prepared	March 1977
	X		2. Project submitted to R & DC for approval	May 1977
	X		3. Development of PAF and PIO/T for project extension	June 1977
		USU	4. Utah State University will assist in the realization of a feed information workshop in Latin America.	October 1977
	X		5. Develop next year work plan and next PAR	March 1978

D. REPLANNING REQUIRES

REVISED OR NEW: PP PIP PRO AG PIO/T PIO/C PIO/P

E. DATE OF MISSION REVIEW

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE

MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE

TA/AGR, Ned S. Raun

TA/AGR, Leon Hesser

6/11/77

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FEED INFORMATION SYSTEM

Utah State University

931-11-130-050-73

External Review

This project was reviewed by an external review team in November 1977. Dr. Jake Krider acted as chairman, Drs. H.H. Stonaker and Manuel Ruiz were the other two review team members. A copy of their report is attached.

The recommendations of the review team were taken into consideration in the preparation of a project statement for extension of this project FY 78-80. This proposal will be submitted to R & DC in May 1977. Principal objectives are 1) to provide technical assistance in the establishment of regional feed information centers in LDC's and the dissemination of information on the nutrient composition of feedstuffs to facilitate the formulation of efficient livestock diets and 2) to contribute to the consolidation of the International Network of Feed Information Centers (INFIC).

Principal Project Accomplishments

- a) Feed nomenclature. A multi-lingual feed composition vocabulary (five languages) has been established.
- b) Feed composition data. Documentation has been prepared for 8093 feeds, feed composition data from 60,000 individual samples have been processed and stored.

- c) Symposium and workshop. An international symposium on "Feed Composition, Animal Nutrient Requirements and Computerization of Diets" was held at Utah State with participants from 25 LDC's and 11 developed countries, and was followed by a two week workshop with participants from six countries.
- d) In 1974 a meeting was held in Stuttgart with personnel from Germany, France and FAO to develop an international feed terminology.
- e) Training. Twenty-seven international and sixteen national workshops were held to train personnel in processing feed composition data.
- f) Establishment of Regional Feed Information Centers. The Utah State International Feedstuffs Institute (IFI) participated in proceedings as related to the establishment of nine regional feed information centers. These included field visits to the Middle East and Latin America.
- g) INFIC. IFI participated in the establishment of INFIC, and in subsequent biennial meetings in Utah in 1974 and Ottawa in 1976.
- h) Publications. These include four books, two feed composition tables for the National Research Council and 26 papers.

Evaluation

Significant accomplishments have been made during the first two years of the present contract. However, the development of regional feed information centers has not progressed as rapidly as anticipated. One contributing factor has been the limited involvement of FAO in the development of INFIC and the regional centers.

Project leadership has been of the highest caliber. Dr. Harris has excellent qualifications is preeminent in this field. Cost/benefit ratios have been highly favorable, and attributable to the effective integration of U.S. and LDC activities in IFI combined with conservative budgeting and program approaches.

Utah State has provided principal support for U.S. feed information activities.

This project responds to a worldwide need to provide improved feed composition information to facilitate the efficient formulation of livestock diets in LDC's.

An extension is recommended in order to foster the development of regional feed information centers in Asia, Middle East, Africa and Latin America, and to contribute to the solidification of INFIC.

This proposal is sound, and cost estimates are commensurate with proposed work programs.

To: Dr. Ned S. Raun, Chief, Livestock Division
Office of Agriculture
TA/AID
State Department
Washington, D.C. 20523

December 15, 1976

From: J. L. Krider, Review Team Leader, Animal Sciences Department

Project Review Team: Dr. Manuel E. Ruiz, Nutricionista
Centro Agronomico Tropical de Investigacion y Ensenanza
Turrialba, Cost Rica
Dr. H. H. Stonaker
6529 E. Highway 14, Ft. Collins, Colorado 80521
and J. L. Krider, Purdue University, West Lafayette,
Indiana 47907

Re: Review of AID Project No. 931-11-130-050-73
Feed Information System
Utah State University, Logan, Utah
November 30 and December 1, 1976

Overall Evaluation. Progress to date on this project has been excellent. The Utah State University staff and support facilities including the computer center staff and equipment are outstanding. The staff works as a team being properly organized to tackle the objectives of the project productively. Utah State University and its staff are unique in having a solid base of experience, expertise, and support facilities to execute this project with objectivity and subsequent productivity.

Four faculty members in the International Feed Institute, Utah State University, three technicians and assistants and one full time secretary are devoting a major portion of time to the overall project. In addition, three persons in the computer center are part-time on the project at the University.

Members of the review team, were enthusiastic about the project and favorably impressed with the progress to date in spite of the many difficulties which have had to be overcome to reach the present level of accomplishments. The plans for 1976-77 were analyzed and some high priority areas of endeavor were agreed upon. These are indicated in part B of this report.

The review team recommends that this International Feed System project receive high priority consideration for the November, 1977 - November, 1980 period under the title "Improving Nutrition Information to Increase Livestock Production" with major emphasis on programs for the less developed countries (LDC's) and also providing some technical assistance to developing countries which will be participating with the Regional Feed Information Centers in the international system.

During the 1977-80 period, there should be much greater accomplishments than during the first three years because of the feed information in the feed data system, international nomenclatures for feeds, publications, documentation, and procedures developed through this project to date. Consolidation of the International Network of Feed Information Centers which are already in place and the development of critically needed new centers with emphasis on the production of feed data and feeding systems methodology for the LDC's are of the highest priority. Continued technical assistance of Utah State University staff will be critical to attaining success in attacking the 1977-80 project objectives. Furthermore, this solid project deserves short-term support both nationally and internationally through 1980, with understanding that major improvements in the utilization of the "bank" of information on composition of feeds and their use in improving animal feeding practices in the LDC's and the developing countries must be a long-term effort. Livestock and poultry producers in many regions of the world including the LDC's will benefit from the solid accomplishments, contributions and technical support base of the Utah State University project.

A. Evaluation of Project Results and Status to Date (1976).

Results to date exceeded expectations although much unfinished work remains to be done. Excellent progress has been made toward the accomplishment of the stated objective even though more high priority emphasis needs to be given to the development of feed information centers to provide feed composition and feeding systems information for the LDC's as well as the developing countries to use in improvement of livestock production. Future emphasis should be of the highest priority for the development of Regional (or country) Feed Information Centers in the Mid-East, Africa, Latin America and possibly the Far East. Dr. Stonaker's report includes several suggestions regarding the Mid-East and Far-East.

Leadership and technical assistance of Utah State staff at centers in U.S., Canada, FAO, France, United Kingdom and W. Germany (Hohenheim) have been essential and critical to the successes of this project to date, and are the key to future developments and successes. Australia must be encouraged to become a more active participant. Consolidation of the International Network of Feed Information Centers (INFIC) and the development of new centers to participate in INFIC are essential to generate feed and livestock feeding systems information for the LDC's and developing countries (DC's).

Domestic animals have much potential in the utilization of feed resources without competing with man for food on small farm holdings in the LDC's and developing countries of the world. These animals provide food, fiber, power, fertilizer and other products to improve mans welfare. They serve as bank accounts and reserve food supplies as well as making daily contributions to the welfare and food supply of small farm families. Progress toward the improvement of the utilization feed resources by animals on small farm holdings in LDC's and developing countries must be a high priority goal of this project. It is recognized

that this progress toward animal production improvement will be based upon: (1) feed composition information; (2) utilization of local feed resources to meet animal requirements for maintenance and production including power; (3) development of feeding systems based on utilization of local feed resources; (4) publication of atlases and bulletins simplifying (1), (2) and (3); and (5) action-demonstration-education programs at the local level with animal producers. This project currently and in the future has the capabilities to make progress on the first four (4) of these basic steps. Within the individual countries, programs should be developed to implement step five (5) to help small livestock farmers in the regions where Regional Feed Information Centers are located for ultimate usage of the information. Simple approaches initially will be required to help small livestock holders utilize local feed resources in feeding systems to improve animal production.

Major accomplishments to date have been numerous. Those of greatest significance are:

1. Updating and documentation of 8093 distinct feeds.
2. Establishing a uniform multi-lingual vocabulary of feed terms internationally with computer print-out capabilities in 5 languages (English, French, German, Portuguese and Spanish).
3. Establishing the IFIC network in the developed countries to collect and/or process feed data bank exchanges and adopt common computer capabilities.
4. Developing plans for a new center to serve Latin America.
5. Exploring plans for a potential center (s) in the Mid-East.
6. Organizing and conducting the International Symposium on "Feed Composition, Animal Nutrient Requirements and Computerization of Diets", July, 1976. There were 316 registrants from 25 LCD's and 11 other countries.

7. Training personnel in 27 international and 16 national workshops or seminars in proper procedures for handling data in the international system.
8. Participating in meetings to give technical papers directly related to the project.
9. Preparing, with the University of Florida, the Latin American Feed Tables in English with abridged tables in Portuguese and Spanish.
10. Publishing technical reports, scientific papers, popular articles and books directly related to the project.
11. Servicing numerous requests internationally and nationally for feed data to be used in country publications including the National Research Council (NRC) Feed Composition Tables in the U.S. The publication and use of feed data in bulletins, atlases, etc. is a major contribution of this project to the U.S., Canada, Europe, Latin America, and potentially other areas of the world including LDC's.

B. Recommendations on Plans for 1976-77

High priority should be given to activities that will permit the collection and transfer of technical information (feed data, nutrient requirements, feeding systems, etc.) to users in the regions served by INFIC with emphasis on the LDC's and developing countries. This should include the establishment of the Latin American Center, San Jose, Costa Rica, supported by a workshop and Utah State University technical inputs. Major efforts should be made to develop methods, through appropriate regional and/or country scientists, to use the feed data in feeding systems to improve livestock efficiency in LDC's and developing countries recognizing that the goal will be to improve production rather than to maximize it.

Work needs to be done in collaboration with all centers (INFIC) to update and correlate procedures to permit publication of information (feed atlases, nutrient requirements, feeding systems, etc.) for country users in respective regions with emphasis on the LDC's. Work with FAO will be required to identify and establish a center or centers in the Mid-East (Egypt was also suggested) to collect known feed data and identify gaps in feed composition data. Workshops, seminars and other communications will be required. If schedules permit, a similar Utah effort should be made to identify a center in the Far-East, perhaps the Phillipines.

Contribute and encourage appropriate INFIC members to generate outputs for use in LDC's in Africa. The centers in Germany, France, and possibly FAO and ILCA (Ethiopia) should be encouraged to pursue this effort actively. As required and requested, a workshop should be planned for ILCA personnel so ILCA can become an important contributor to INFIC. Seminars and other appropriate methods should be considered.

The publication of country and/or feed atlases, nutrient requirements and feeding systems recommendations to utilize feed resources should be pushed with emphasis on the LDC's.

Other publications related directly to this project should be completed and published as soon as feasible.

Service to national and international groups by providing appropriate feed composition data tables is an important project activity. This includes data for U.S. National Research Council publications, as well as data for country and regional feed composition reports.

Efforts must continue to improve on the quality and quantity of feed data for the "bank" through scientifically accepted chemical and biological procedures.

C. Recommendations on Future Needs 1977-80.

It is critical that this project should continue so that "deposits" may be drawn from the feed data "bank" for usage to benefit LDC and developing country programs.

High priority needs and goals of Utah State University which is in a strong leadership position are as follows:

1. Participate in the consolidation of the International Network of Feed Information Centers (INFIC).
2. Provide technical assistance in the establishment of other regional feed information centers to help make INFIC a viable international network with emphasis on feed composition, nutrient requirements and feeding systems in publications to utilize available feed resources to improve animal production in the LDC's.
3. Collaborate with regional feed information centers to generate, compile and disseminate feed composition data to users. Encourage the publication of feed atlases, nutrient requirements and feeding systems utilizing examples from simple procedures for calculation of diets as well as computer formulation procedures. These may be approached on either by country or by life zones where the latter are mapped (altitude, latitude, temperature, rainfall, nutrition and feed data, etc.) and classified. Feed composition tables are valuable to users of available feed resources at every level of animal production technology from the small animal producers in the LDC's to the larges producers in the developed countries such as Europe, U.S., Canada, etc.

4. Develop procedures and generate data to fill important gaps in feed composition information with special consideration being given to important pasture species and stored forages ^{in some mixed feeding systems} for extending feed usage in LDC's and developing countries. This will require technical assistance in working closely with regional and national groups to identify and fill important feed information gaps including data on composition of important forages in LDC's as well as developing countries.

Technical assistance in the preparation of regional atlases on feed composition and their publication is recommended even though there will be gaps in the data. This will help focus attention on gaps in the data and encourage obtaining data to fill the gaps. Whenever feasible, nutrient requirements and feeding systems should be included in the atlases to help users to improve animal production efficiency in the LDC's and the developing countries.

The need continues for storage and retrieval of feed data at Utah State University as appropriate for the regional centers.

Finally, technical assistance from the Utah State staff will be required to provide many types of training to improve the capabilities of cooperating personnel in IHFIC, new regional centers, and LDC's. This should be done utilizing workshops, short courses, graduate and undergraduate training, and new regional and/or country publications.

Major focus should be toward the improvement of livestock production in the LDC's. In doing this, it must be recognized that benefits also will accrue to the benefit of animal producers in the developing and developed countries.

It is highly recommended that the Utah State University project should be supported by TA/AGR/USAID to help meet these needs and pursue these goals during 1977-1980.

Appended are the reports of Dr. Ruiz and Dr. Stonaker.

One major consideration of the review team was that U.S.A. financial support was lacking while benefits were substantial for meeting numerous demands for feed composition and nutrition data as well as other information to support scientists, animal producers and others in the United States. Feed data tables for NRC, National Academy of Science, publications should be of superior quality containing the best available data on composition of feedstuffs and availability to meet animal requirements.

To: Dr. J. L. Krider

December 15, 1976

From: H. H. Stonaker

Re: Utah - AID Project Review

General -- The unusual situation relative to the Utah project is the unique opportunity to help Dr. Harris and staff in their monumental effort. It seems unlikely that we will soon see another group as dedicated to such a burdensome but necessary documentation effort. In the absence of unforeseen problems, I would strongly urge continued support through to Dr. Harris' retirement in 1981 (Dr. Matthews indicated 3 years more and possibly 1 extra before Harris' retirement).

Specific recommendations -- Agreement between AID representatives or consultants and the Utah staff were noted in project plans and revisions. There are a number of these and I will not repeat them here as they will be presented by Utah in a revision. Thus, I will emphasize those few changes that I hope can be implemented.

1. High priority to at least one publication in 1977, giving pertinent tabular data on feeds in an additional LDC area. The "Middle East" appears to be the area most indicated. While this cannot be as complete as the Latin American Handbook, it will serve to give an example of the quantity and quality of material available, and the type of data still missing. It will provide AID with an additional valuable publication emanating from the project. Other geographic areas needing similar publications are India - Nepal - Bangladesh; Philippines, Malaysia; Australia - New Zealand - Indonesia; East Africa - West Africa; South Africa.

It is considered highly important that even one "incomplete" publication on tabular data be produced in 1977.

2. FAO through its field staff out on UNDP projects should be approached relative to LDC approval to include aid to INFIC by collecting pasture samples of species not yet chemically analyzed or not likely to be chemically analyzed and yet of nutritional importance to grazing animals in LDC's. Granted this will be made simpler if the French make available their data on pasture species from former French Africa. However, the opportunity still exists for much of Asia. By 1978, the amount of effort in this direction should be clearer. This would put FAO into an active role in this project which would be very desirable.

I am not too happy about the location of a Middle East Center in Baghdad despite FAO involvement there. Egypt would be better because of its greater depth in scientists and the special interest displayed by one Egyptian at the Workshop. Arab countries including Pakistan would be more likely to collaborate with Egypt. Iran and Israel will have to be considered separately and will probably be able to contribute directly to Utah independently. India, Nepal and Bangladesh would probably work closely with the federal Indian Agricultural Research Institute in New Delhi. Plans for data contributions from Australia and the Philippines need no further comment as Dr. Harris and Dr. Raun have direct contacts there.

I endorse continued concentration on accumulating tabular material especially on pasture species in LDC areas. Other studies or projects on the utilization and application of information in LDC's should be independently organized and not detract from the completion of this work by the present Utah project staff.

The following questions and comments are given about the project for future consideration.

- 1) What contact has been made with feed companies in LDC's relative to the analyses they have on local feeds? Purina in Colombia, for example, was getting amino acid analyses in addition to other information. Purina probably would offer assistance in the LDC's in which they operate.
- 2) Emphasis at labs should be given on INFIC's interest in ring tests. Funds are not yet allocated for providing for analysis that cannot be economically done in LDC's. Is Hohenheim set up for this?
- 3) In general, I think a center will be more useful when interest at a local university and a local tenured scientist is used in preference to FAO or other organizations being used as the responsible agency. The problem as discussed, is too little continuity in personnel. Thus, a relationship should be developed on individual situation basis.
- 4) For the time being, I prefer regional publications on a country basis rather than ecologically. The reason being that most users will be interested in local feeds irrespective of ecological zone.
- 5) I think the use of PL 480 funds for seeking Fulbright Research Scholars to do work along the lines of Chris Christiansen's in Latin America might serve in India, Egypt, and the Philippines.

REPORT
ON THE ACCOMPLISHMENTS AND FUTURE WORK PLANS
RESULTING FROM THE PROJECT ENTITLED
"FEED INFORMATION SYSTEM"

Manuel E. Ruiz
Consultant
AID Review Committee

Submitted to Dr. J. L. Krider, Leader of the
AID Review Committee

1. Data of review: November 30 and December 1, 1976.
2. Place: Utah State University, Logan, Utan,
U.S.A.
3. Objectives:
 - a. To review the work carried out by Utah State University under the Project "Feed Information System" (AID Project No. 931-11-130-050-73).
 - b. To evaluate the work plan and budget for the period November 16, 1976 to November 15, 1977.
 - c. To evaluate other future work plans as contemplated in an application for a new contract from AID regarding the Project entitled "Improving Nutrition Information to Increase Livestock Production".
4. Personnel contacted:
 - a. Project Personnel
 - Dr. Lorin E. Harris, Leader and Director of the International Feedstuffs Institute (IFI), Utah State University (USU).
 - Dr. Leonard C. Kearl, Associate Director of IFI.
 - Dr. Paul V. Fonneseck, Research Associate, Department of Animal Dairy Sciences, USU.
 - Mr. John J. Pierce

-Mr. Howard LLoyd

b. Other participants:

- Dr. Doyle J. Matthews, Dean, College of Agriculture, U.S.U.
- Dr. Kent R. Van Kampen, Head, Animal Dairy Sciences Department, U.S.U.
- Dr. John E. Butcher, Professor, Department of Animal, Dairy and Veterinary Sciences, U.S.U.
- Dr. William C. Christiansen, Formerly Leader of the Feed Composition Project at University of Florida.
- Mr. R. Welling Roskelley, Retired, Formerly Leader of the Farmer Scholar Program in the Phillippines.
- Mr. Karl A. Fugal, Assistant Director, U.S.U. Computer Center.
- Dr. Ned S. Raun, Chief, Livestock Division, Office of Agriculture, Bureau for Technical Assistance, AID
- Dr. J. L. Krider, Professor, Animal Sciences Department, Purdue University, and Leader of the AID Review Committee.
- Dr. Howard Stonaker, Consultant, AID Review Committee.

5. Documents reviewed and discussed:

- a. Animal Nutrition Research at Utah State University and Cooperating Agencies.
- b. First International Symposium on Feed Composition, Animal Nutrient Requirements, and Computerization of Diets. Abstracts.
- c. Maximizing Profits by Use of a Computer to Calculate Diets for Dairy and Beef Cattle and Sheep. Cooperative Extension Service, International Feedstuffs Institute and Departments of Animal and Dairy Sciences, Utah State University, Logan, Utah. 1974.
- d. Current USAID Contract (with amendments) with Utah State University Contract No. AID/ta-C-1159, Project No. 931-11-130-050-73).

- e. Annual Report November 15, 1974 to November 15, 1975, on Project No. 931-11-130-050-73.
- f. Annual Report November 15, 1975 to November 15, 1976, on Project No. 931-11-130-050-73.
- g. Harris, L. E., H. Haendler and L. R. McDowell. International Feed Nomenclature, a Reprint from Proceedings of the Conference on Animal Feeds of Tropical and Subtropical Origin, Tropical Products Institute, 1st-5th April. 1974.
- h. Harris, L. E. and L. C. Kearl. International collection and dissemination of information on animal feeds. Article taken from Report on Project 079, Journal Series No. 1835. Utah State University.
- i. Harris, L. E., J. M. Asplund and E. W. Crampton. An international feed nomenclature and methods for summarizing and using feed data to calculate diets. Utah State University, Agricultural Experiment Station Bulletin 479, 1968.
- j. Hand-out Sheets containing summarized information on (i) Project Accomplishments, (ii) Work to be accomplished in 1977, (iii) Work to be accomplished by INFIC prior to 1977 Meeting, (iv) Recommendations of INFIC, (v) Objectives of Project Proposed for November 1977 to November 1980, (vi) USU Computer Center.
- k. Improving Nutrition Information to Increase Livestock Production. Application for a Contract from the Agency for International Development. International Feedstuffs Institute, Utah State University. 1976.
- l. Project Statement and Noncapital Project Paper (PROP), Referred to Project Proposed for 1975-1980.
- m. United States Feed Data Bank. An application for a grant-in-aid from the U.S. Department of Agriculture. Utah State University.

6. Results:

- a. Work accomplished during the period November 1974-November 1976.

Most outstanding among accomplishments is the international agreement on a common nomenclature for feedstuffs and a common procedure to permit their computerization and free

exchange of information. To this end the Project has played a key role both as an initiator and as the principal processing and editing Center. The results of this work (documentation of 8093 distinct feeds) are readily available in five languages.

Through the creation of INFIC, which was made possible by the initiatives shown by the Project, it is now feasible to promote the formation of Regional Feed Information Centers with automatic membership in INFIC and immediate technical assistance by more experienced groups.

Several types of activities (local visits, the International Symposium on Feed Composition, publications, workshops and seminars on procedures and coding) have served well to establish links among people and institutions from various parts of the world and to provide knowledge of the principles of the Feed Composition Project. However, despite all the activity displayed in this regard, it would appear that the Project (and INFIC) has not been sufficiently successful in making itself widely known and its objectives understood, at least in Latin America. This situation arises from the fact that there is a shortage of manpower and money in the Project at the data processing and higher technical levels. For example, almost a year's delay is expected in the publication of the Proceedings of The International Symposium. Also, the direct connection that the University of Florida had established with the collaborating laboratories in Latin America has almost disappeared.

b. Work Plan Projected for the period November 1976 - November 1977.

It is recommended that the highest priority should be given to any activity that will permit the transference of technical data to farmers, extension agents and private industry and professional people in the LDC's. Also, the best efforts should be devoted to providing technical know-how related to the organization of Regional Feed Composition Centers and related to improved feed analysis procedures. Specifically, for the coming year, the Project should provide technical help for the formation of the Latin American Center for Feed Composition and Feeding Systems. Several factors have come together to indicate that the formation of the Latin American Center is highly likely and that it will be receiving widespread support

from national institutions and significant help from the Inter-American Institute of Agricultural Sciences (IICA) of the Organization of American States. This Institution has promised help in the search for and free administration of funds, collaboration through the use of its computation facilities and participation of its statistician and computer operators. In addition, through its representatives in each American country, and its Inter-American Documentation and Information Center, IICA can easily establish a network for retrieval and distribution of data.

Several Latin American groups have already endorsed the possibility of locating the Regional Center in San Jose where, in addition to IICA, the University of Costa Rica and the Tropical Agricultural Research and Training Center (CATIE) would play important organizational and operational roles.

As far as the regional need for such a Center is concerned, it suffices to state that at the 1975 Latin American Association of Animal Production (ALPA) Meeting in Venezuela there was unanimous support of the idea of holding a Workshop in San Jose in 1977 in order to discuss what type of biological information should be obtained, processed and distributed that would best fill the needs of the Latin American rural people and the professional workers. Also, it was reported during the review Meetings in Logan, that Mexico was requesting technical collaboration for the pooling and publishing of Mexican Feedstuffs Nutritional Information. Other countries may follow this example.

It is evident that funds must be found to finance the San Jose Workshop. This is the logical initial step for the organization of the Latin American Regional Center. It is calculated that nearly US\$7,000 is needed for travel and Per diem expenses of 8 representatives of 4 ecologically different zones. To the effect of obtaining financial help from AID, contact will be made with the Director General of IICA to officially request this support.

Making the technical data available to LDC's is another activity of high priority. In fact, in reference to the Latin American Center, one of its first activities could be publication of feed composition tables per country or per life zone, or both. This would require the assistance of Utah State University.

The identification of a Middle East country to host the Regional Center should receive more attention. That is to say, that closer contact with arab institutions is needed to detect advantages and disadvantages in various aspects. This activity, again, clearly falls within the general recommendation that IFI should project more towards the LDC's.

Relations with INFIC should continue to be strengthened during this year. Particular attention should be given to the question of FAO's sponsorship of INFIC. Either in conjunction with this or as a separate issue, INFIC should also establish a working relationship with the AGRIS System, which would greatly facilitate the dissemination of feed composition data and technical (literature) information to the LDC's. To this end, IICA-CIDIA (in San Jose, Costa Rica) could provide advice and endorsement.

- c. Proposal of a New Contract from AID concerning the Project "Improving Nutrition Information to Increase Livestock Production"

The progress obtained through the work of IFI and AID must not be truncated. In fact, the point has been reached whereby there now exists a massive body of information, and a knowledgeable group (IFI and INFIC) which should be put to use in a more direct manner for the benefit of local LDC Programs.

A special effort should also be directed towards the integration of feed data with the feeding systems concept and methodology. This implies working closely with regional and national groups in the identification of information gaps (for example, more information on grass management's effects on its utilization is needed) and new biological parameters (for example, input-output relationships). Assistance with improved laboratory and computational procedures should also become an important feature of the new Project. This component includes the special training of laboratory and computer technicians for short periods. With regard to Latin America, IFI in collaboration with the Regional Center could initiate correlation studies between feed composition (and nutrition data) and ecological variables, taking advantage of

existing life zone mapping and classification. The basic idea is to obtain as much benefit from the data bank as possible, to ultimately achieve a more efficient utilization of local food, human and land resources in the IDC's for the improvement of their peoples' quality of life.

cc: NSRann (AID)
JEArango (IICA)
JSoria (CATIE)
HMuñoz (CATIE)

December 8, 1976
MER/efl