Aspects of a Plan for Technical Training for Latin America

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RESUMEN

Muchos de los programas de entrenamiento han fallado debido a que se han basado en programas normales de grado avanzado, o porque han requerido demasiado tiempo para llegar a un acuerdo; lo mismo de parte del estudiante como del instructor. Muchas veces, una vez obtenido el diploma, no regresan a su pais de origen. Frecuentemente aquellos que regresan se encuentran que las posiciones prometidas o esperadas han sido ocupadas, durante su ausencia, por personas menos preparadas. Asuntos como la preparación técnica con preferencia especial a la administración de las zonas costeras, el amillaramiento de los recursos y el desarrollo, son tratados detalladamente. Se bosqueja un programa diversificado que pudiera satisfacer las necesidades educacionales, de entrenamiento y de investigación. Esto permitiría un entrenamiento a todos los niveles y suministraría la necesaria flexibilidad para obtener las mas avanzadas destrezas. A continuación se presentan los pasos de entrenamiento, los cuales no son necesariamente ni recíprocos ni exclusivos.

1. Curso breve (1-3 semanas) de preparación técnica en la lengua nativa en el pais en cuestión. Se enfocaría principalmente a niveles inferiores y medios y se desarroa un grupo de instructores que se encargarían de la instrucción de dichos cursos.
2. Curso breve (1 semana) de entrenamiento y planificación dirigido a líderes de negocios e industriales, dirigentes políticos, radiodifusores y personas de la prensa. Se ofrecería en la lengua nativa o en inglés, en el pais en cuestión o en los Estados Unidos, dependiendo del tema. El principal objetivo es demostrar la relación entre los problemas ambientales y hacer que los responsables de llevar a cabo el plan de acción, estén conscientes sobre la necesidad de un plan integral que incluya áreas tales como desarrollo industrial y agrícola, turismo, acuacultura y desarrollo de pesquerías costeras y estuarinas.
3. Programas de grado de organización hermana. Entrenamiento general en la universidad local con preparación en investigaciones y supervisión de tesis con los dirigentes universitarios adecuados en los Estados Unidos. En aquellos casos donde se prevea una relación a largo plazo, pudiera establecerse una oficina o programa.
4. Programas de certificado. Programa de entrenamiento especializado sin los requisitos propios del grado y admisión, con el fin de obtener un certificado de entrenamiento apropiado en una especialización.
5. Programas de post-grado que provean el entrenamiento técnico necesario.
6. Entrenamiento técnico relacionado con investigaciones dirigidas por universidades de los Estados Unidos en el pais en cuestión. El pais destinaría fondos para proyectos de investigación, lo cual requiere el uso y entrenamiento de científicos y técnicos nativos y así se ayudaría a alcanzar los objetivos de las investigación básica y aplicada; dichos objetivos deben ser planificados cooperativamente.

Se insiste en la necesidad del desarrollo y planificación cooperativos en todos los

puntos anteriores, con excepción del No. 5, y en las dificultades en obtener los fondos para tales planes. Los programas mencionados en los Nos. 3 y 4 requieren la cooperación y probablemente la modificación de las normas referentes a la expedición de visas por el gobierno y a facilitar hospedaje a estudiantes universitarios de tiempo parcial.

Se mencionan los problemas propios de la estructura financiera de las organizaciones privadas y públicas dentro de los Estados Unidos y con la ayuda federal a tales programas internacionales.

The University of Miami has had research interests in the tropics from its founding and each new graduate program quickly received students from Latin America. The marine program, now formally The Rosenstiel School of Marine and Atmospheric Science, has been concerned especially with tropical America, with regard to research and training that involved coastal resource identification, assessment, and management. Each year many of our graduates participate in the deliberations of the Gulf and Caribbean Fisheries Institute, the annual meetings of other societies, and in international workshops. Yet, for all that has been accomplished, we still have inadequate resource surveys for our coastal waters and our need for facts on which to base assessment of resources is far outstripping our capacity to supply that data base. Some areas are developing so rapidly that possibilities for coastal aquaculture disappear before we can call attention to the potential. Funding, an all important ingredient to science and management, is inadequate and sadly is frequently squandered with no useful results. We have all witnessed failures of certain programs, shared the frustration of seeing good ideas fail to generate support, and others get abused.

A few basic observations gained through these shared experiences are in order.

1) There is an urgent need to coordinate and indeed integrate planning with regard to the coastal zone and its resources.

2) We must increase training programs for technicians in virtually all fields related to fisheries.

3) Conventional graduate programs do not provide an appropriate training path in that they involve much course work that is unessential to the tasks at hand, require more time than is available, and produce too few graduates. Graduate programs serve other purposes which should not be subverted.

4) Many countries provide inadequate job opportunities at appropriate pay scales so that such scientists as are trained move to more developed nations and technicians are attracted from fisheries to industry and business.

5) No real effort has been made to utilize television, radio, and the press in educating people in Latin American nations to the desirability and indeed the necessity of developing and managing their country's renewable resources or to the problems associated with multiple uses of coastal waters and the consequence of abuse of the environment in terms of lost jobs, products, and income.

6) Most countries have not developed extension services in fisheries comparable to those provided in agriculture. There is a real need for such service free from political or national implications associated with organizations or agencies of the United States government.

This paper discusses six program areas which in combination address the needs of technical training and research of fisheries in tropical countries, especially those that have little technical development. The first five of these topics concern education and training.

I. *Short Course* (1-3 weeks) technical training in the native language in the target country.

These courses are aimed at lower and middle technical levels and are built around specific topics. The short time commitment enables one to involve the best people as teachers and to assemble students. Costs are relatively low assuming that teaching facilities will be made available and that housing for the students can be provided. Lectures are prepared in advance and translated and visual aids for overhead projection are prepared. The two are combined into a syllabus booklet for the student. Even where the lectures are given by a translator the expert should be available throughout the course for questioning. Demonstrations and field trips are incorporated as necessary, instruction is on an intensive basis, 6-8 hours per day. It is the intention of this program that local instructors will assume responsibility for repeated offerings of the course using the proposed syllabus.

II. *Short Course* (1 week or less) training in management and planning.

These courses are aimed at business and industrial leaders, political leaders, broadcasters, and press persons. These will be offered in English or other languages as appropriate and may be offered in the United States or another country depending on the subject. The primary aim of courses at this level is to demonstrate the interrelationships of environmental problems and to cause policy makers to realize the need to integrate planning in such areas as industrial and agricultural development, tourism, aquaculture, and coastal and estuarine fisheries developments. If, for example, cattle land is converted to a cotton crop and the run off of fertilizers and pesticides cause cessation of coastal fisheries and fish farming, then such costs and job losses should be taken into account in the initial cost recovery assessment. Too often, in the United States and elsewhere, cost accountability is judged on a basis that does not examine impacts on adjacent non-related industries. The attractiveness of an industry that will create new jobs is surely lessened if its plant effluent diminishes or destroys the livelihood of other families downstream and removes their produce from the market. Frequently, uses of an area or resources planned simultaneously by different agencies or sectors of business are noncompatible. Scientists and economists can expose these factors in seminars so that decisions can be made on a more solid basis.

III. *Sister Institution Degree Programs.*

These permit a student to pursue a degree in an institution in his or her own

country and yet prepare a report, thesis, or dissertation under the direction of some recognized expert. From our standpoint, the University of Miami is interested in its own areas of expertise, but the concept knows no national limit. Advantages of the program are that the student does not have to meet language, entry, and graduation requirements of a university in the United States, requirements that frequently have little meaning for the student or his country. The local degree makes it more likely that the graduate will remain in the home country. In cases where a long term relationship involving numerous students is foreseen, an extension office or program might evolve. Since these students may take few courses at our University, changes must be made in current policy to permit foreign, part-time students access to University housing. Similarly, most student visas are issued for full time participation in conventional programs so that proper procedures must be established to render easier the obtaining of visas for students in this and the next program.

IV. *Certificate Programs.*

Certificate programs involve specialized training for a limited time period, less than a year and frequently a single semester. The University of Miami has had such a program for 10 years and while each has involved a single student there is no reason not to involve small groups of students. In fact it is economically sound to do so. Students receive a certificate stating that so many hours of training have been received in a given subject area. This training frequently is applicable to an advanced degree program should a student desire to pursue such a course within a reasonable time. We have been able to utilize experts and facilities of the National Marine Fisheries Service in past certificate programs. Again, participants are not burdened by graduate entrance requirements.

V. *Graduate Programs.*

As mentioned in the introduction, traditional graduate programs have well established goals and requirements and will continue to operate in the United States under guidelines set by various associations of graduate schools. What should be recorded here is that students from foreign countries are often unnecessarily delayed by improper planning. In cases where a student is sent on a government scholarship, advanced planning, especially with regard to thesis or dissertation topic can be of great benefit. It is desirable in fields like fisheries or marine sciences to promote a dissertation not only pertinent to the student and his country but one that can be completed in his home country after course work and other requirements are completed. Time must be allowed for completion of the dissertation under these circumstances and it is essential that the candidate be allocated a position in his or her home country. All universities devote much time to graduate training, and the effort is never fully compensated. It is therefore especially disappointing to see an exceptional student return home only to find no job or, worse, to find that a promised job has been given to one less well-trained. As an academician and department administrator I cannot overstate this problem.

VI. *Research Associated Training.*

In our efforts in foreign waters, University of Miami scientists have attempted to the greatest extent possible to contribute lectures at local colleges, to bring groups aboard our research vessels for demonstrations, and to involve scientists of the region in cruises. However, much more can be gained through cooperative planning of research to be funded by the country or through joint proposals to agencies of both countries and to foundations. Such research projects should be both of applied and basis character and should involve, to the maximum extent possible, scientists and technicians from the country in whose waters the work is conducted. Few countries in the Americas have a National Museum for the deposit of documentary specimens. Such collections properly funded and cared for and with funds for visiting scientists could attract systematists and biologists and lead to further studies and an improved base of information on natural resources of the country. Government systematists in the marine field are involved in resource identification and can cite many examples where basic studies by ichthyologists and invertebrate zoologists using the survey material, have contributed information important to resource development in this area. Although some countries seek, and properly so, to share collections, they do not provide for their care so that resource materials important to future scientists in their own country are lost. This inhibits training and research development, and discourages cooperative research efforts from biologists who could contribute in an important way to the knowledge of animals with commercial potential.

The University of Miami is a private university, and the role of the private university needs discussion. Non-profit organizations must cost account every program. Their operational dollars are basically derived from tuition income which supports the teaching programs, graduate programs usually being carried by undergraduate teaching and contract research. In training and education programs with foreign countries, these institutions must recover costs and this means salary allocations, overhead, travel, and other costs. An important need in planning truly cooperative ventures, and to us this means cooperation at the start, is the provision of travel funds for planning sessions in the countries in question. Private universities are free from the national or political connotations that rightly or wrongly are inevitably associated with agencies of government. Thus they offer a cooperative pathway in training and research based on mutual respect and interests. The faculties of private universities are not used to extent possible in technology transfer. With shifts in funding the time is ripe to use this resource.

Finally, an independent organization such as the Gulf and Caribbean Fisheries Institute offers an excellent forum for discussion of problems not only of the fisheries themselves but of the coastal and inland changes that affect coastal and estuarine environments, the quality of fishery stocks living in them, and the use of the products of the fisheries. GCFI should seek an expanded role in this regard.