

IDRC TRAINING STUDY: INDONESIA

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Introduction

The present report was prepared under an IDRC consultancy extending from June 8th to July 31st, 1980. The primary sources of information used in its preparation were the many interviews conducted during four weeks of travel in Indonesia and in Singapore from June 8th to July 5th, 1980. Persons interviewed covered a wide spectrum of Indonesian academics and government officials in many places as well as IDRC supported participants of various training programs in all four major program areas of the Centre Divisions. Also interviewed were ASRO based program officers of all four Divisions. A list of persons interviewed is appended to this report. The report also includes insights on Indonesia obtained during many trips made to Indonesia in the course of the writer's five and a half years with the Centre at ASRO as Regional Liaison Officer of Asia for the Social Sciences Division. During these years and during the consultancy period, the writer travelled widely throughout Indonesia covering not only Java, but also Sumatra, Sulawesi and Bali. Finally, the report draws on a number of documentary sources of relevance to research training issues in Indonesia. A list of these sources is likewise appended to this report.

Because of time limitations, the coverage of the study could not be comprehensive. Although every effort was made to provide an adequate picture of the training situation of Indonesia as a whole, more detailed information is largely confined to more important centers which have been and remain the most important foci of IDRC program activity in Indonesia. That more remote and less developed centers of potential or actual research efforts could not have been visited and reported upon in greater detail is the most important weakness of the present study as every evidence points to these as being in the greatest need of Centre attention. This lacuna should be remedied in the future, at least in the course of program development.

Finally, the reader should be aware that the author of this report is a social anthropologist by training. He was able to observe and comment upon the social science scene in Indonesia with reasonable confidence. He was much less confident in dealing with the other fields of IDRC program interests, and allowances should be made for inaccurate perceptions and conclusions resulting from inadequate professional background to properly evaluate the points at issue in the Agriculture Food and Nutrition Sciences, Information Sciences, and Health Sciences.

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## PART I NATIONAL OVERVIEW

### Indonesia: the country, the people, the economy

Indonesia covers an area of approximately 1.9 million sq. km. only 12% of which is cultivated and 64% of which is forested. Its population in 1978 was estimated at 137 m, 44% of which was under 15 and growing at the rate of 2.1% a year. Life expectancy was 50 years for males and 53 years for females.

A basic fact that needs to be grasped to understand this vast land is its incredible diversity. Although unified under one government, one official language and the dominant Muslim religion, it is a land of contrasts. The population is divided among some 20 main ethnic groups and numberless subgroups each strongly conscious and jealous of its identity and geographical base and speaking its own language. The Chinese, the largest non-Indonesian minority, are about 2.6% of the total population. Although the Muslims number approximately 80% of the population, there are strong Christian (4%) and Hindu (2.5%) enclaves, not to mention large numbers of animists (7.2%).

About 60% of the total population of Indonesia lives on the island of Java, on area not more than 7% of the whole Indonesian territory. In 1959 the population density of Java was 1,168 per sq. mile compared to 62 per sq. mile for the Outer Islands. Development is very unequal. While Java is relatively developed and has modern cities such as Jakarta and Surabaya, many populations in the Outer Islands and in Irian Jaya are hardly touched by modernity, some living at subsistence not to say primitive levels.

Indonesia remains a predominantly agricultural country. Out of a total work force of 48 m. in 1978, 60% were in agriculture and fishing, 10.3% in commerce and services, 6.7% in manufacturing and mining, 1.7% in construction. In 1977 the GDP at constant (1973) prices was estimated at Rp. 9,031 billion. Merchandise exported in 1977 was valued at US\$10,853 million, 67.2% of it derived from petroleum. Indonesia had a favourable balance of payment in 1978 in the amount of US\$703 million and foreign reserves in September of that year stood at US\$2.4 billion. The rate of growth of the economy from August 1977 to August 1978 was 8%. Although still a developing nation, Indonesia can hardly be ranked among the least developed on the basis of the state of its national economy. It has come a long way indeed in the last two decades thanks mainly to its resources in oil and the creation of OPEC of which it is a member in 1973 which greatly increased its cash value.

In 1978 Indonesia had a student population of 284,361 at the tertiary level, 3.4 m. at the secondary and 17.3 m. at the primary level. Given the age distribution of the total population, the implication is that more than 60% of the population of school age is not in fact getting any schooling. One can assume that the rate of illiteracy of the adult population is higher still. Looking beyond national averages, it also appears legitimate to assume that these rates are much higher outside of the main islands of Java, Sumatra and Bali. It is said that in Irian Jaya for example, more than 2 million have no education whatsoever.

### Early development history of Indonesian tertiary education

Looking more specifically at tertiary education, its present status is best understood in the light of the history of its development.

During the Dutch colonial period, the Dutch government deliberately neglected "Indonesian" education. The official education system was predominantly geared to serve the needs of the colonial masters. Instruction was given in Dutch primarily for the children of Dutch officials and business people. This eventually extended to the university level with institutes specialized in engineering, medicine and agriculture. Only a few well connected Indonesians were allowed to attend. Supplementing the official system was a small but important sector of private schools run both by Christian mission and local groups that enabled some Indonesian children to acquire a basic education. Some graduates were able to transfer into the privileged sector of the official system or to proceed overseas for advanced education. By 1940, perhaps as many as 1000 native Indonesians had obtained a university level first degree. In contrast with these Western oriented schools were a variety of indigenous schools combining Islamic education and vocational training.

The Dutch did encourage research in areas of practical value. Important research was conducted in agriculture, botany and zoology. Engineering and Tropical Medicine were also emphasized. The Dutch also supported investigations of Indonesian customs (adat), archaeology and physical anthropology. This research system had its base outside of Indonesia however as the research was conducted by well known professors of Dutch universities who did not involve Indonesians in their projects.

The war years obviously did not favour the development of the educational system in Indonesia. With the departure of Dutch expatriate teachers local languages and Japanese replaced Dutch as a medium of instruction. Indonesia declared itself independent at the end of the Japanese occupation but refusing to recognize it the Dutch pursued a debilitating colonial war through 1951. It was only after this that the Indonesian Government could finally turn to the task of national development including the establishment of a truly Indonesian system of education.

The first 2 universities of Indonesia were founded shortly after independence. The University of Gadjah Mada was established in 1949 and the University of Indonesia in 1950. Both universities had several campuses. All were located in Java with the exception of the Faculty of Economics of the University of Indonesia which was located in Ujung Pandang, South Sulawesi.

After independence there was increasing demand for more equitable distribution of educational opportunities. A government decree of 1961 called for the establishment of at least one state university in each province. Responding mainly to considerations of prestige and status there followed a phenomenal proliferation of universities in all parts of the country due to the action of local politicians and administrators. During the period from 1951 to 1965, the number of nationally supported higher education institutions increased from 3 to 42 (at least on paper). This expansion was made possible mainly by conferring independent university status on groups of faculties previously affiliated with an older university, and in-corporating private faculties as state universities. Towards the end of the Sukarno period (1963) teacher training institutes (IKIP's) were differentiated from the normal universities. The IKIP's were subsequently to contribute importantly to the emerging national education system.

In addition to state universities, many private institutions of higher education were established which were recognised by the government. Their number was in fact larger than that of state institutions and they eventually..

came to play an important role in meeting the demand for higher education in Indonesia. In this connection, one can mention an unusual feature of the emerging system of education which recognized parallel sectors of secular education supported mainly by the central government and of religious education supported mainly by the local communities. The latter did not fall under the administration of the Ministry of Education but was "coordinated" by the Ministry of Religious Affairs.

Besides the state and private universities, other state colleges and academic programs were started under the auspices of several government departments such as the Department of Interior, the Dept. of Public Works, etc. Originally developed as a type of higher vocational training program to supply the necessary middle manpower for the respective departments, they were upgraded into institutions of higher learning in the 1960's in spite of doubtful qualifications and inadequately planned training.

The rapid increase in numbers of institutions of higher learning from 1951 to 1965 was achieved at the expense of quality. Severe shortages in human and fiscal resources led to a serious decline in educational quality. Teachers were underqualified and underpaid. The largest library in the country stocked no more than 200,000 titles most had much less. No university had a research budget of its own. Whatever research was done, usually of an applied nature, was accomplished using funds provided by government bureaus, companies or foreign governments that wanted to obtain some practical output from the research. The declining quality of education proceeded in conjunction with the deterioration in other sectors leading eventually to the collapse of the Sukarno government and the emergence of the "New Order" under General Suharto.

#### Higher education and the New Order

The technocratic approach of the new regime did not, in the initial period, lead to dramatic changes in the educational sector but by 1967 a basic policy document of the Ministry of Education called for an overall review of existing policy. Specifically, it stated strongly that no more expansion would be allowed and that stress must be laid on quality and consolidation.

As a first step, a number of faculties, of higher academic standing were selected by the Government and assigned a leadership role in upgrading other faculties in the same discipline. These are the so called pembina or "developer" faculties. The pembina faculties were then grouped into five disciplinary consortia i.e. the consortia for (1) agricultural sciences (2) science and technology, (3) medical sciences (4) social sciences and humanities, and (5) education and teacher training. The Consortium of Social Sciences and Humanities was subdivided into 5 sub-consortia: for law, economics, social sciences, arts and philosophy and psychology. This structure still persists. The consortia are advisory boards of the Minister of Education and Culture in designing nation wide development programs in their respective fields, and executing them. Their advice is also sought in educational policy formulation.

They provide information on personnel and activities in their own discipline and make recommendations on curriculum and fields to be developed. They also participate in the selection of candidates to be sent abroad

for degree training. Each consortium has a secretariat which coordinates its activities and issues reports of various kinds. These are located in the centers of excellence for that discipline. The secretariat of the consortium for agriculture is in Bogor, that for technology in Bandung, and that for the sciences in Yogyakarta. All others are in Jakarta. Not all function equally well. Those that are best organized and fully operational are currently the consortia for medicine, agriculture and teacher training.

### Reorganization of the structure of the university system

The first Five Year Development Plan adopted a selective approach to the development of higher education in line with the directive of concentrating efforts and resources on consolidation rather than further extension. Starting from 1971-72, five out of 40 state universities/institutes were selected to be developed into SKALU universities or "centers of excellence" on the basis of the following criteria:

- (1) academic standing
- (2) possibility of interdisciplinary studies and research
- (3) potential for innovation and experimentation
- (4) capacity to extend their excellence to other universities
- (5) prospects of better and quicker returns from investment
- (6) spheres of influence in terms of students, teachers and academic disciplines

The institutions selected were the following:

- (1) University of Indonesia in Jakarta
- (2) Gajah Mada University in Yogyakarta
- (3) Airlangga University in Surabaya
- (4) Bandung Institute of Technology in Bandung
- (5) Bogor Agricultural University in Bogor

The rationale for concentrating on these centers rather than on others for development was that given their initial excellence, the time and resources required to bring them up to higher standards was much less than those required to build up entirely new or less developed centers. Moreover, as these five centers accounted for 80% of the total pembina faculties, the resources needed to develop them would also benefit all other universities in the nation.

The decision to concentrate development efforts and funds on the five "centers of excellence" appeared to make sense at the time and was perhaps appropriate for that period. It provided Indonesia with a number of institutions giving graduate training of more than sub-standard quality in which students of other areas could enroll, a rather important function. In practice, this policy began to cause serious problems, some of them due to the centers of excellence themselves. It seems that they did not take their pembina role as seriously as they could. Getting the lion's share of the educational budget, their own interests were given top priority in the allocation of funds and staff time. Very little was leftover to service the more backward institutions they were meant to serve. At least this is the contention of these institutions. Another factor was that all of these favoured institutions are on Java which fired the ever latent resentment of the populations on the other islands who, because of ethnic

considerations or otherwise, found objection to Javanese hegemony and were quick to point out that although 75% of the national income is derived from the exploitation of natural resources outside of Java, less than 25% of this is used to develop these islands. Their universities began grouping themselves into regional associations such as the Eastern Islands Association of Universities or the Sumatra Association of Universities and demanded a more equitable share of the educational budget. Because of this and undoubtedly strengthened by the increased national income derived from oil wealth, the government has now reversed its position and higher priority is given to the development of provincial universities. When any mention is now made of privileged centers of excellence, officials of the Ministry of Education manifest embarrassment and point out that this designation no longer applies. Currently efforts are being made to develop a second layer of pembina faculties in the outer islands of Indonesia to serve as growth centers to assist the development of other universities in the region.

Other action was taken to consolidate the network of institutions of higher learning such as regrouping them through integration and mergers. A first effort was done in 1967 when branches of Institutes of Teacher Training and Education located in cities away from the mother institutes were integrated into local universities. This was done for all branches of IKIP Jakarta, 5 branches of IKIP Bandung, and 3 branches of IKIP Malang. Each became part of the university of the locality in which they were located. 1968 saw the beginning of the gradual phasing out of the branches of universities situated in locations far from the university town, resulting in the centralization of all faculties on one campus or at least in close proximity to one another. By 1970, an effort was begun to integrate institutions of higher learning under the jurisdiction of other ministries into state universities under the Ministry of Education and Culture. For example, the Academy of Public Works and Energy managed by the Ministry of Public Works and Energy was integrated into the Bandung Institute of Technology as a polytechnic institute. It was hoped to be able to reduce the number of state universities from 40 to about 20 of higher quality,

It is not known to this writer whether Islamic or other private institutions followed the same course of evolution. As the former are not under the Ministry of Education and Culture and the latter only marginally so, information is much more difficult to come by. A 1979 publication states that at present there are not less than 363 institutions at the tertiary level scattered throughout Indonesia. 40 of these are governmental institutions and 323 private. A partial list indicating the year of establishment, the faculties represented and number of students and teaching staff is provided in appendix 1. The staff to student ratio for state universities is given as 1 to 13; in private universities it is 1 to 20. In the latter, the ratio of part-time to full-time staff is 4 to 1.

In 1975 university students of Indonesia were distributed in the following fields of study among state and private higher education institutions:

Fields of Study	State	%	Private	%	Total	%
Science & Mathematics	5,700	4.2(81.4)	1,300	1.1(18.6)	7,000	2.75(100,
Social Sciences & Humanities	53,700	39.9(39.4)	82,700	68.9(60.6)	136,400	53.6 (100)
Medicine	11,000	8.18(61.1)	7,000	5.8(38.9)	18,000	7.0 (100)
Technology	17,500	13.0(77.8)	5,000	4.2(22.2)	22,500	8.8 (100)
Agriculture	14,000	10.4(77.8)	4,000	3.3(22.2)	18,000	7.0 (100)
Education	32,600	24.3(62.0)	20,000	16.7(38.0)	52,600	20.7 (100)
Total	134,500	100(52.8)	120,000	100(47.2)	254,500	100 (100)

Note: Percentages in brackets are calculated horizontally. Those not in brackets are calculated vertically. The categories are those of the consortia.

I do not have the information to draw any conclusion on the extent to which this distribution conforms to the educated manpower needs of Indonesia. I have been told that some manpower studies have been made including projections of future needs but that they are extremely unreliable. It would seem that this pattern of development is explained at least in part by the fact that the fields of study that are most developed (at least quantitatively) are those which require least investment in terms of equipment and facilities. These tend to proliferate more in private sector institutions which are also the weakest financially.

I was told in the Ministry of Education that the following is the order of priority now being pursued in the development of the fields of studies in the institutions of higher education of the country:

1. Education and teacher training
2. Science and technology
3. Accountancy
4. Agriculture
5. Medicine
6. Social sciences

The critical shortage is in education and it is difficult to develop because it carries little prestige. Social science is given low ranking, not because it is not seen as important but because it is relatively better developed in comparison with the other disciplines. It needs to be upgraded however. Over production by disciplines is not seen as a problem. The problem is rather one of distribution. Trained personnel are not where they are most needed. Thus, there are more social scientists in Jakarta than needed but too few in more remote institutions. The medical profession is notorious for wanting to practice in larger centers rather than in rural areas. Because of this, a 1975 ruling now requires all young medical doctors on graduation to serve initially in health service deficient areas for a period before moving on to an urban practice if such is their intention.

## Reorganization of university curriculum

Beside the reorganization of the structure and management of the university system, the national development plan for higher education of 1967 directed that action be taken to improve the curriculum and to develop the teaching staff of the institutions of higher learning to upgrade their quality and potential.

The basic structure of the education system of Indonesia included a six year primary school feeding lower and upper secondary schools that had both academic and vocational streams. At the top of the system were a variety of institutes, academies, universities and teacher training institutes which provided tertiary education. The structure of tertiary education inherited from the Dutch was retained. It comprised two levels of degrees: the doctorandus (Drs/Dra) or the engineer (Ir.), and the doctorate. The first degree could be earned in theory after 5 years of course work. In practice, it almost always took at least seven years. The second or doctorate degree took an additional 3 to 5 years to earn. It involved no course work but consisted in the preparation of a thesis based on personal research. In practice, some additional course work is usually needed. The Faculty of Economics of Gadjah Mada University for example provides a 7 week course in research methodology and other short courses for its Ph.D. candidates.

This system is now seen as inefficient and unsuited to modern conditions and the needs of development. It is gradually being replaced by a 3 degree or 3 cycle systems. The first or Sarjana I cycle involves 4 years of course work and leads to a downgraded doctorandus or engineer degree roughly equivalent to a bachelor's degree. The next two cycles, Sarjana II and Sarjana III are of the Pasca Sarjana or post-graduate level. The second cycle to be completed in two years involves 3 semesters of course work and leads to a Magister (master's) degree. (It is usually referred to as the Magister Program). The third cycle (Doktar Program) leads to the Ph.D. As opposed to the old system, the new doctorate cycle requires 3 semesters of course work in addition to research and the preparation of a dissertation. Theoretically this cycle is intended to be completed in 2 years but this is certainly unrealistic.

Current planning also makes provision for a non-degree or Diploma Program (Sarjana 0) for high school graduates who either fail to gain admission to a university or who for various reasons do not wish to engage in protracted formal degree courses of study. The clientele for such a program is fairly large. In 1975 the number of high school graduates was roughly 100,000 and projected to grow at the rate of about 5% a year. Of these 100,000 approximately 80% applied for admission to higher education. Of the latter only about 32% could be accommodated, leaving a total residue of 74% of the high school graduate population of that year to be catered to, not to mention graduates of previous years in the same situation. The duration of the Diploma Program is planned to be of 2-3 years. The program is directed to a relatively narrow field. The emphasis is on skill formation and the training is terminal.

Although the scheme outlined above has been discussed for a number of years it is yet far from being completely implemented. The main and obvious constraint of course is the shortage of trained staff. It has also been the policy of the planners not to engage in higher educational development projects



at the expense of the undergraduate program.

During the first years, top priority was given to the Doktor Program to train competent instructors to feed into the system. A special bureau was set/in the Directorate-General of Higher Education in the Ministry of Education and Culture to coordinate the implementation of this program. There are currently up-graded doctorate programs in the following institutions:

University of Indonesia, Jakarta  
 IKIP Jakarta, Jakarta  
 Bogor Agricultural University, Bogor  
 Pajajaran University, Bandung  
 IKIP Bandung, Bandung  
 Gadjah Mada University, Yogyakarta  
 Airlangga University, Surabaya  
 IKIP Malang, Malang

Meanwhile, these and other universities continue to offer the old doctorate program.

Indonesian academics now distinguish three types of doctorate programs which are functioning concurrently;

1. The free system which is the original system. It can and is participated in on a part time basis. There is no time limit for its completion.
2. The transitional system. This is already the new system requiring full-time application but not having gone through a fully developed second cycle program, students are required to take remedial courses. There is another version of this system called the "sandwich" type in which students do some of their course work abroad for which they are given credit by the Indonesian university which grants the degree.
3. The new fully developed system. The doctorate program in economics at Gadjah Mada University developed with Rockefeller Foundation support was cited as an example. In fact it is still a transitional system. Although it was inaugurated in 1976, no degrees have yet been granted because of the inadequate academic background of the students entering the program. Remedial study over and beyond the planned Ph.D. curriculum becomes necessary.

Although importance is still given to this program, there is currently a shift in emphasis in the higher education development planning policy to the Magister Program. The Bogor Agricultural University has had a Master's program in agriculture since 1975 (environmental and natural resources management; statistics and rural social sciences). The Bandung Institute of Technology has also developed such a program in its field. Magister programs in social science are scheduled to begin at the University of Indonesia and at Gadjah Mada University in 1981. There are also plans such as a program in educational research at IKIP Yogyakarta. This program is slow in taking off. It requires more teaching staff than the old program and qualified staff is in short supply.

Meanwhile, efforts are being made to develop and strengthen the more efficient 4 year first cycle programs. They are currently operational at the Bandung Institute of Technology in the field of technology at the Faculty of Letters, University of Indonesia in the field of arts and letters, at IKIP Yogyakarta in the field of teacher training, at the Bogor Agricultural University and the Agricultural Faculty of Gadjah Mada University in the field of agricultural science. The curricula developed by the last two institutions are now being introduced in 6 other universities in provincial areas.

The Diploma Program is still in the planning stage. It is being developed but not yet fully approved. Current thinking in the Ministry is to have trial runs implemented by Teacher Training Institutes in some area.

#### University teaching staff development

With respect to the policy of developing the teaching staff of the institutions of higher learning to upgrade their quality and potential, earlier documents refer to 3 systems:

1. The "seeding" system by means of which better senior students are selected and prepared to become faculty members in their university of study.
2. The "grafting" system by which junior staff of less developed universities are sent to more developed universities to serve as counterparts or understudies to more senior staff there to gain experience and skill in teaching and research, and later return to their universities.
3. The "upgrading" system which provides refresher courses for existing faculty members by staff of the pembina faculties.

In line with the new policy of favouring the development of provincial universities, the most recent directive of the Ministry of Education and culture modifies this plan somewhat. The second and third systems are maintained but the first is abolished. University staff recruitment now becomes centralized so that theoretically at least, anyone applying for a university teaching position can be sent anywhere, even to a remote university. Moreover, senior staff of more developed universities are invited to contribute time on secondment to less favoured institutions to assist them in their development effort and advise on institution building. Doubts are expressed however that many senior staff of cosmopolitan universities will volunteer to go to remote universities. There is a feeling in cosmopolitan universities, moreover, that they are needed to run their more advanced programs at home and for this, staffing is already barely adequate.

The upgrading efforts are usually coordinated by the Ministry of Education and executed by or with the help of the consortia. These are usually short term courses offered on an annual basis with funds made available for this purpose to the upgrading centers. For example, the Directorate of Research and Community Service Development of the Ministry of Education currently has a program to upgrade research capability in universities outside of Java. Teams of senior scholars are sent to a university, for example, in Irian Jaya or Kalimantan. A typical course will be given to about 60 junior staff of the universities in their region over a period of 2 weeks on research methodology. A first course deals more in generalities. This is followed up by a second more specialized course dealing more specifically with the disciplinary interests of the participants. Small research grants are also provided by the Directorate of Research to apply the skills acquired in the training. This exercise is also used as a selection process to identify suitable candidates for study grants. The best students are given the opportunity to pursue post graduate degree programs both in-country and abroad.

There is a very wide variety of similar but usually more elaborate upgrading programs taking place in Indonesia involving the participation of foreign agencies. Examples of these are given in following sections of this report.

As mentioned above, the staff upgrading program for university staff also has provisions for degree work both in Indonesia and abroad. This program is coordinated by the Directorate for Academic Infrastructure (Directorate-General of Higher Education) with the objective of providing the teaching staff of universities with the opportunity to get higher degrees. Much of the funding for this comes from outright grants by foreign agencies (cf. infra) but the Indonesians are clearly investing much of their own money in this activity. It seems that much of this is currently derived from loans received from overseas sources. From USAID alone, loans have been received in the amount of US\$15.9 million since 1976 for training support alone. US\$5 million of this is earmarked directly for higher education development. The remainder is for more general professional resources development. Similar loans in the same order of magnitude have been obtained from or are being negotiated with the World Bank and the Asian Development Bank. The seriousness with which the Indonesian government is taking educational development gains credibility from the fact that compared to Repelita I (the first Five Year Development Plan 1969-1974) education's funds for Repelita II were increased five fold.

I have no recent comprehensive information on overseas training of Indonesians. The following table provides data on the number of students studying abroad and their fields from 1970 to June 1973. As all training grants including those provided by foreign donors have to be cleared by the Ministry of Education and Culture, the listing is probably inclusive of overseas training under all funding.

#### Upgrading Program Abroad 1970-1973

	<u>Degree Program</u>	<u>Non-Degree Program</u>
1. Agricultural Sciences	135	37
2. Science and Technology	152	53
3. Medical Sciences	222	141
4a. Law	16	18
b. Economics	58	42
c. Social Sciences	74	51
d. Arts and Philosophy	99	29
e. Psychology	21	9
5. Education and Teacher Training	195	43
6. Other	38	86
Total	1,010	509

There is no problem of brain drain in Indonesia except in a minor way to Malaysia. Scholars might be frustrated in their home universities but they do return after completing their studies abroad. The returning rate of USAID grantees is 99.5%. There is evidence of some internal brain drain, more qualified staff in provincial institutions responding to opportunities to teach in larger centers, but this is not documented.

#### Training potential of Indonesian institutions

We can pause at this point to evaluate the training potential of Indonesian institutions of higher learning as a whole in the national perspectives. More details on select institutions are provided below.

A comprehensive evaluation of higher education was conducted in 1975 by the Ministry of Education and Culture. Its main conclusions were as follows:

1. Seen from the points of view of potentiality achievement and interest (applications for admission), there were substantial variations among higher education institutions.
2. There was low productivity and inefficiency.
3. The composition and structure of courses were ill-defined and were not development oriented.
4. Limited university admittance resulted in failure to accommodate the ever increasing number of high school graduates.
5. The potential for universities to develop their own resources was very limited.
6. There was a relative lack of stable conditions to allow for uninterrupted pursuit of knowledge and learning.

On the brighter side of the picture, there is evidence to show that a critical mass has been achieved in some disciplines and in some institutions that makes the delivery of quality training possible. This has happened mainly in the pembina faculties of the centers of excellence. The most often mentioned examples are the following.

1. Agriculture: Bogor Agricultural University and Gadjah Mada University. More recent joiners of this elite are Brawijaya University, Udayana University and Hasanuddin University.
2. Technology: Bandung Institute of Technology.
3. Economics: Gadjah Mada University, University of Indonesia, and Bogor Agricultural University (for agricultural economics).
4. Social Sciences: Gadjah Mada University, University of Indonesia, and Bogor Agricultural University (for rural sociology).
5. Medicine: Gadjah Mada University, Airlangga University, and the University of Indonesia.

Having said this, there is a need to add that there is much room for improvement and development and even these centers of excellence are plagued with many problems (cf. below). More importantly, they are strained to the limit and can satisfy only a small part of the training needs of the country. A recently completed study commissioned by the World Bank concludes that the demand for skilled agriculturalists exceeds the supply by a factor of 7 and that current programs in agriculture at the Ph.D. and M.Sc. levels are operating beyond their capacities with increasing demands made on them.

The following comments on the Agricultural Economics Department of the Bogor Agricultural University by staff member ADC Associate William Collier illustrate the situation. In the Agricultural Economics Department, of the 12 Indonesians on the graduate staff, all have other non-university activities. Only 3 spend even one-half of their time in the department assisting the training

program. This is a department that has 73 graduate (M.Sc. and Ph.D) students and 208 undergraduates. As the demands on university staff increases, the number of fellowships available has drastically declined in the last few years. Due primarily to the US Congress decision not to fund so called "elite" education in developing countries, funds available for fellowship programs in the US are almost unavailable. ADC, Ford Foundation, and Rockefeller have almost stopped sending ag. economic students to Western countries. Some opportunities are still available for study in Australia. ADC still has a very active M.Sc. fellowship program (funded by IDRC) for study within Asia. Because of the large amount of funds from the World Bank loan, opportunities for agricultural economists in the Ministry of Agriculture to get fellowships for study in Western Universities are still good. But this does not help universities which are expected to train substantially increased numbers of M.Sc. and Ph.D. candidates. Young graduates in agricultural economics are not being drawn into the Agricultural Economics Department at the Bogor Agricultural University because of the hiring freeze and better opportunities for study abroad in the Ministry of Agriculture. A very serious situation exists at the Agricultural Economics Department because it is not continuing to attract younger staff to fill the positions of the senior staff who are no longer active at the University or who have left it completely because of better financial rewards elsewhere. Their salary and benefits at the University add up to about US\$200 a month. They can earn upto \$2000 a month outside.

Notwithstanding the development efforts of the last 15 years and noteworthy accomplishments, the national picture of higher education in Indonesia is still rather bleak. This should not cause too much surprise given the negative Dutch colonial heritage, the late beginnings of higher education in the country and the years of stagnation up to the late 1960's when quality education could only be received abroad. There are many manifestations of this state of affairs and it is not always easy to distinguish cause from effect. The most frequently mentioned reasons for the low productivity of universities are the following:

1. Shortage of good trained manpower. The best are concentrated in a small number of institutions and even these are often lost to academia by being drafted by government for planning or administrative positions.

2. Low salaries. Indonesian salary scales for academics remain among the lowest in the Asian region. They have never been sufficient to provide an adequate livelihood. More recent rises have not kept up with the cost of living. A mid-career social scientist with a foreign Ph.D. will earn around Rp. 40,000-60,000 (US\$64-96) a month as his base salary as a civil servant. Teaching staff are virtually forced to devote important parts of their time to other occupations to supplement their income. Virtually all are in fact part time staff.

3. Physical constraints. Many universities do not provide adequate office space for the teaching staff. Having no place to work at the university they are not often there, hence are not available to students for consultations or to colleagues for discussions. Libraries are poor and not used even by the lecturers. There is clearly minimum involvement with the university.

4. Low emphasis given to teaching and few or no contacts with students outside of the classroom. Lecturer-student relationships in a tutorial situation are non-existent.

5. No incentive for professional development. There are few research opportunities and the publication of work is not rewarded. There is little concern for scholarship or for maintaining one's professional standing.

6. Weak sense of professional identity. There are few relations with colleagues on a professional basis and access to outside new ideas is difficult because English is not sufficiently known. This intellectual isolation is particularly conspicuous in provincial universities.

7. Problem of in-breeding both institutionally and ethnically. Generations succeed one another within a same institution or within a same ethnic group, students being recruited to join the staff in their university of study and they in turn will recruit their own students to join and later replace them. As a result there is likewise an in-breeding of ideas and little innovation.

8. Lack of interest in or capacity for planning, with a few notable exceptions. Given the present climate of extreme centralization of educational planning and the role of the disciplinary consortia, there is very little scope left for planning at the provincial level.

Although all of these factors have been related to me by various sources and although I have been able to verify them first hand on several occasions, as a composite picture it smacks of the stereotype and I find it suspicious. This would have to be confirmed by sympathetic observers with more intimate knowledge of Indonesian institutions of higher learning than I have, but I refuse to believe that the situation is universally as hopeless as this profile implies. Without denying that corrective measures are urgently needed, I believe that an objective investigation would reveal many exceptions. I have known dedicated educators in Indonesia who believe in their calling and give the best of themselves to their students. Overcoming the odds, they somehow manage to deliver the best education that can be provided in the circumstances. There has to be others; otherwise the system would be beyond redemption which, once again, I refuse to believe.

#### Planning, research and development in Indonesia

One hears repeated time and time again in Indonesia that universities have three basic functions: teaching, research and public service. Universities are expected to play a major role in national development. Their development must conform to national development plans. They are expected to engage in activities of national priority both for their research and public service.

Prior to the establishment of the New Order, research and planning did not receive substantial support. Once established however its technocrats developed it with a passion. The first action in this area was the establishment

of BAPPENAS, the Central Planning Agency in 1967 which drafted the nation's First Five Year Plan (Repelita I) and its successors. At the same time, the Ministry of Education and Culture proposed the opening of a special office for educational assessment which eventually became known as the Office of Research and Development for Education and Culture (BP3K). Following education's example, central R and D units (usually called Litbangs) were established in most of the other ministries. Moreover a new Ministry was established for the sole purpose of planning the national research agenda.

As a general principle the universities and their affiliated research institutes were to be the principal agencies for basic research. The Litbangs came to be viewed as the principal agencies for applied research and development as well as forward planning at the sectoral level under Bappenas' general guidelines. Finally, line bureaus within each ministry would be responsible for short-run planning and administration. In practice, it did not take long for deviations to spoil this neat model. In the field of education, for example, the rapid input of resources from 1974 onwards encouraged line bureaus to respond faster than research and development could guide them. In some cases line bureaus simply ignored research and drafted massive projects off the top of their head, or projects were launched without a research base but with the provision that an on-going evaluation be used to modify content as defects appeared.

Given the centralized pattern of Indonesian government and the pressure to rapidly program an expanding budget, the growth of a centralized research and planning system was imperative. It soon became apparent that this centralized system was not enough. Provincial level planning units were institutionalized which were local counterparts of the central agencies; BAPPEDAS for BAPPENAS and other provincial offices for agriculture, education, etc. all busily involved in elaborating development plans for their areas. Even universities were requested to prepare their own individual development plans. Planning offices were in vogue. As there were few trained planners at this level, the hundreds of plans that were produced were of doubtful value as guidelines for development.

Turning now to the role of the universities in this system, we note that higher educational institutes employ over 25,000 teachers, most of whom have some experience in research. In fact, only a small fraction are involved. The Directorate General for Higher Education is responsible for developing program guidelines for and funding basic research in national universities (including IKIPs) and private universities. A parallel bureau in the Ministry of Religious Affairs has this function for Islamic universities (IAIN). Yet apart from these bureaus the government also includes the Ministry for Research as well as LEKNAS, the national center for the coordination of economic and social research and LIPI, the Indonesian Institute of Sciences. Thus at the center, a number of institutions exist to perform seemingly identical functions. Adding to this confusion is the difficulty in distinguishing applied from basic research, especially in the national context where the practical task of development receives such strong emphasis. It comes as no surprise then that academic researchers have difficulty in discerning the criteria used by higher education authorities for the funding of research in order to prepare proposals accordingly. A more direct and more lucrative route is to go directly to the government units which are consumers of applied research. Because of the nature of these projects and the way in which they are implemented, those involved in them receive little academic benefit from the experience. The other side of the coin is that a significant increase in trained manpower and funding does not necessarily lead to better research because of grave systematic constraints.

Indonesian professionals are constantly forced to occupy themselves with projects and problems which have been imposed upon them from outside. They have no control over their own intellectual agenda. The research they engage in is pursued more because it is an important source of secondary income rather than an end in itself. If the subject matter is in their field of interest, that is purely fortuitous. In larger projects, one finds very little continuity in the membership of the groups associated with each stage of the project. Those drafting the research design are normally relatively senior professionals, and they are likely to reappear at the write up stage of the project. Collection of data is regarded as a relatively junior task, and this is often left to a completely different group of individuals who have little understanding of the potential significance of the data which they are collecting. Similarly, tabulation of data is seen as mundane & menial. Again, senior professionals are unlikely to be associated with this aspect of the research. When they get down to analysing the data and writing up the research, the information they are dealing with is not the result of a process over which they exerted some control. It could just as well be secondary data. It is not surprising therefore that research reports are of a very uneven quality. Segments of reports do not hang together because they never really were together as part of a single process of conceptualisation, design and research.

What follows is drawn from conclusions of a recent study of the Indonesian Research and Planning system. Basic research has little impact on practice. Applied research often follows implementation. Line bureaus carry out research projects largely independent of the Litbangs. Planning units are everywhere. However, a charitable observer will appreciate the pressure placed on the system in the current era of forced-feed development and view this maze as a creative response.

A practical consequence of this situation as it affects donor agencies with a mandate to promote and support development research such as the IDRC is that it is extremely difficult to get a coherent picture of national development priorities on which there is a consensus and which are sufficiently specific to provide the basis for individual project development. Given the basic Centre Philosophy of being responsive to local priorities I consistently probed in my interviews with Indonesian academics and government officials to learn from them what these priorities were. More often than not I drew a blank. Beyond the general guidelines provided by the National Development Plans - and even these, few were able to articulate clearly or were receiving direction from them - what most expressed was more in the nature of personal views of what they considered to be important which might or might not agree with those of others in the same field of activities. Shopping lists of activities to support on a national level tend to be inconsistent because of poor coordination between plans and planners. It follows then that to use this alone as a basis for supported program development is very unreliable. The use of expert knowledge on Indonesia and its problems becomes indispensable if donor agencies are to develop meaningful programs.



Despite the confusion of the Indonesian research and planning system, a number of principles seem to apply:

1. The highest density of personnel with research and development skills is in the central Litbangs and the universities. University people while capable of practical work are unwilling to participate unless paid a special incentive. Moreover, they have little understanding of the operations of government and are weak on practical suggestions. Litbang people while short on training are more practical.
2. Research projects turned over to universities may produce interesting results but there is no formal system for communicating these results to decision makers. Thus few applied and developmental projects are given to universities but rather are designed and conducted by central agencies.
3. Many of the key figures in the central administrative and research offices are former professors or are currently professors seconded to government offices. Even though in an administrative position, people with this background feel they have the competence to oversee the research aspects of their units. Thus with surprising frequency line units initiate their own research projects.
4. Projects, whatever their source of funding, are normally composed of teams from diverse agencies. Litbang people, while a minority in many projects, are often assigned a leadership role. This is not always because of their position in the administrative structure. Some central R & D units, the Center for Research of the BP3K for example, have highly qualified professionals on their staff.
5. Wherever a project is located and however noble its intention, the connection to decision making maybe poorly articulated. Thus it is often difficult to see how research and development affect policy. In some cases, the tie is indirect, in some cases it is still too early to expect an impact. In many cases however the research is ignored. In the climate of New Order administration research and planning are given such a place in development effort that it has acquired a quasi ritual aura. All budgets have a research component. Administrators find themselves compelled to assign research contracts simply to get the money moving before the end of the fiscal year so that they can report to their superiors that research has indeed been performed as directed. What is done with the results is not their concern.
6. Virtually all projects to date have been initiated by the center to deal with problems of relevance to the center. Mechanisms for listening to the periphery are poorly developed.

As in the case of the evaluation of the productivity of Indonesian universities as training centers given above, so also the preceding statements on the status and effectiveness of research and planning in Indonesia should be qualified with the caveat that although the defects indicated are diagnostic of the problems faced in the exercise of these functions in the country, they are not so universal that nothing good is happening at all. Not all research done by academics is as bad as indicated. Some have good understanding of the problems of administrators and are producing research results that are attended to and translated into meaningful action. Indonesia offers many examples of successful and fruitful collaboration between university, Litbang and line agency which do not conform to the rather negative image projected above. Some examples are given in the following sections. Clearly the system is suffering from growing pains. Too much has happened too fast.

Integration and adjustment require more time. One may question the effectiveness of research administration in Indonesia but not the seriousness of intent in getting research done to support development efforts. A good measure of this seriousness is the magnitude of public funding provided for the support of research. Although not all have equal access to it and I have no specific information on its size, this funding is clearly considerable. I have heard many comments to the effect that in Indonesia, the main problem of research is not the funding but the research capacity to use it. An examination of IDRC supported project budgets would probably reveal that few, if any, countries of the Asian region provide a higher proportion of local counterpart funding.

#### Expatriate expert involvement in Indonesia

Although not without misgivings because experiences have not always been happy, Indonesia is one country in Asia that still welcomes expatriate advice and participation in project development and implementation for teaching, research and action programs. Indonesians are aware of their country's limitations in numbers of trained personnel to assume these functions and the constraints of the system in which they operate which make it very difficult for them to achieve good results. It is not that expertise is absent. There are Indonesian world standard experts in most fields of knowledge but they are too few and almost none are available to devote most if not all of their time to implementation of any one given task. The best usually get siphoned into administration and become policy makers. This is not a loss to the country as the benefits of their expertise get to extend far beyond the scope of any one project but the transfer causes the program they were trained to implement to go wanting. Because of inadequate remuneration in their official positions and the need to supplement income to maintain a style of life for their families in keeping with their station, the involvement of virtually all Indonesian professional in any given activity cannot be anything but part-time in fact. In Indonesia, the designation "full time" project director, by their own candid admission, means one who assumes full responsibility for it using time available left over from other "full time" occupations. Depending on how much this is, the project suffers more or less, but suffers in any case. One can lament the incredible short sightedness of the authorities responsible for this situation but it is a fact of life donor agencies such as the IDRC have to contend with, and there is little hope that it will change in the near future.

Enter the expatriate adviser contributed by a foreign government, international organization or private funding agency. He or she has an assured income provided for the sole purpose of executing one specific task and for this he or she is answerable to his or her organization. He or she is not bound by myriad distracting obligations derived from patronage, kinship, friendship or whatever. In a word, the expatriate adviser, as distinguished from his Indonesian counterpart, is in a situation in which he can and must devote all of his energy to his assigned task. As he was normally recruited on the basis of his expertise, his performance is usually superior.

There is a great demand by Indonesian authorities at all levels for expatriate advisers to take advantage of the benefits described. They play an important role in many different development related activities. Several examples are given both of the demand for and performance of expatriate advisers in the next section. There are many more. The more successful projects are usually related to their participation. However desirable the complete Indonesianization of the teaching, research and development functions, it is not close to being

achieved and there will be a role for expatriate advisers for many years to come.

The more successful advisers are those who speak Indonesian and have previous experience in Indonesia usually in the context of their academic training, e.g. Ph.D. research. If they have lacked this experience, they have taken positive steps to acquire the equivalent skills in the first months of their assignment. They have a strong commitment to Indonesia and are willing to dedicate a substantial portion of their professional careers, 5 years at the minimum, to their task there. They have strong research interests and are willing to carry out their own research in cooperation with Indonesian colleagues and students. Persons with these qualifications are not easy to find but they do exist. Those currently active in Indonesia are more numerous than one would expect.

## PART II - INSTITUTION AND TRAINING PROJECT ANALYSIS

The section that follows reports more directly on institutions visited and on conversations held with various persons interviewed during the consultancy from June 9th to July 1st, 1980. It could not be a complete coverage of the Indonesian situation given the vastness of the country and the large number of institutions. The difficulty of establishing contact and making appointments, especially in Jakarta further contributed to the spottiness of the coverage. It is presented as a sampling or as illustrations of the situation described more generally above. General information on the universities of Indonesia is provided in Appendix 1. It is not repeated here. The institutions are generally grouped according to their relevance to IDRC Program Division areas in which projects supported have had a training component. The major groupings are those relating to the AFNS and SS Divisions as the overwhelming majority of projects having a training component were developed by these two Divisions. Groupings relating to the IS and HS Divisions on the other hand are small as very few of their projects included training.

### A. AFNS DIVISION

#### Brawijaya University, Malang, East Java, Faculty of Agriculture

As mentioned above, the Agricultural Faculty of Brawijaya University is being developed as an agricultural pembina faculty. It has had an old style two cycle program leading to the doctorate for a number of years. The 3 cycle program is scheduled for implementation by 1982. Given the current intensive staff development program, this seems to be realistic. The Faculty currently has only 3 Ph.D.'s on its staff, one in soil science, one in agronomy and one in agricultural economics. Twenty six other staff however are currently engaged in Ph.D. level studies in agricultural fields, 6 in Australia, 2 in the Philippines (UPLB), 5 at the Bogor Agricultural University, 3 at Gajah Mada University and 10 in this Faculty. Besides these, 12 more are taking Master's degrees: 2 in the United States, 6 in Australia, and 4 at the Bogor Agricultural University. There are presently 420 students on stream in the old system, the majority of whom are from East Java. It is anticipated that the new improved program will accommodate approximately 400 students. Currently, only approximately 10% of the applicants to enter the program are accepted, which shows the extent to which the demand for

study is not met. It is expected that the new Pasca Sarjana system will be an improvement not only in the organization of the course work but in the quality and variety of courses offered as well. Thus for example new course offerings will be not only in applied fields but in basic, more theoretical areas as well.

The IDRC has contributed to this development through training opportunities provided by the Cassava Project (73-0043/76-0060). Phase I of this project was coordinated by the former dean of the Faculty Dean Paskoro Winarno. It had a full time staff of 2 and 7 part-time supervisors. One of the two full time staff, Mr. J. Harnono Nugroho was supported by the Centre to do a Post Graduate Internship at CIAT, Cali, Colombia from November 1977 to May 1978. The second Phase of the project beginning effectively in 1977 is coordinated by the present dean, Dean H. Soetono and has a full time staff of 7. It has a more deliberate training component in that the research being accomplished is geared directly to the fulfilment of the doctorate (old system) requirements of the main participants. In other words, the degree research is done as an integral part of the Cassava Project.

Dean Soetono interviewed as project leader provided excellent insights on the overall training situation and on the relative merits of the training provided in the present context. He was trained abroad earning his MA at the University of Florida and his Ph.D. at the University of Adelaide.

In his discussion of trainee problems, the Dean was referring primarily to those on his staff supported by the Project - he clearly knew them and this programs well - but also to Indonesian tertiary level students generally. For those studying in his university or in Indonesia there few problems of a personal nature. For those studying abroad he saw language difficulties as the main problem followed by family demands at home, especially in the case of married students. He did not see inadequateness of academic preparation as a problem in the case of his own candidates because they are screened beforehand and simply not proposed to donors for training support if they are found wanting in this respect. Generally speaking, the problem is greatest for those graduated from Indonesia universities before 1960 because the quality of training was so poor. It is not so difficult to find suitable candidates among those graduating after that.

In selecting candidates for overseas studies, the Dean stresses academic merit over their potential contribution to his own institution. There is little danger of brain drain. Even if they do not return to work in his Faculty on graduation, they do not stay overseas so that the benefits of their training is not lost to their country. In whichever institution they are, they can engage in useful work in the national interest such as soil mapping. Teaching loads tend to be light and they have time for contract research - a good source of income but also useful. An important quality to look for in the selection of candidates for study awards is their flexibility and ability to cope with the constraints of less favourable working conditions when they return. He tries to anticipate this problem of frustration by giving them challenging responsibilities in the Faculty immediately on completion of their training.

Further elaborating on his rather remarkable policy, he looks upon institutional development as a two step operation. The first step is to develop a pool of scholars, and this is done on an individual basis. The second step is to select the most suitable persons from this pool to staff the institution. The larger the pool, the better the chance to develop an acceptable system. He sees his present efforts as a first step operation.

On the issue of the appropriateness of Indonesian agricultural students studying abroad vs studying in Indonesia, or studying in Third World countries vs studying in industrialized countries, the Dean feels that for the next 5 years, priority should generally be given to overseas degrees. That will become less necessary as the quality of training improves in Indonesia. Generally speaking, industrialized countries offer better technical training but one should not be blind to the fact that excellent and perhaps more appropriate expertise can be found in developing countries even in Southeast Asia. For example, this is true for agriculture in the Philippines, for tropical biology in Indonesia, and for tropical medicine in Thailand. It can also be misleading (for other reasons) to assume that a training institute is inferior because of its location in a Third World country). Thus, an international center such as CIAT is as good as or better than industrialized country counterparts because of the benefits of international collaboration. (Other examples are IRRI, CIMMYT, ICRISAT, IITA and ICARDA).

Having said this, the Dean was of the opinion that all things being equal and regardless of where the theoretical course work is done, field research should be done in one's own country.

Questions on choices of styles to be adopted by IDRC for providing training support (in the context of a research project or not, and using which selection procedures) brought inconclusive answers from the Dean as well as from most others of whom the same questions were asked. There is a conflict of interests here. The IDRC interest is in sound management of funds in the framework of its own constraints providing optimum results along the lines of its mandate. It is difficult to convince and probably unreasonable to expect would-be grantee institutions to believe that what is good for IDRC is good for them. Their interest is to get the funds with the least possible complication so that training can be provided for the candidates of their choice and they can get on with their research activity. The most effective way of administering IDRC training funds can only be an IDRC decision based on the characteristics of places, individuals and institutions rather than any consensus of advice on the matter inspired by self interest. I find the Dean's answers revealing from this point of view. In the case of the training support provided through the Cassava Project, it is of no importance to him whether this support is tied to the research or not, providing it is given in fact. He can and does accomodate to any selection procedure. In practice it does not really make much difference. The Dean is well known and respected. His recommendations carry weight and are acted upon under any system.

In the case of the actual procedure followed for the situation of the Cassava Project related grantees, the Dean has no complaints. The grant was made to the Faculty whose staff made the final selection in consultation with a resident foreign expert as required by IDRC. The applicants who did not receive support were borderline cases. The Dean praised the flexibility shown by the IDRC in providing this training support. Specific examples given were the selection procedure (the Ford Foundation makes such selections using its own consultants); training funds can be used in one's own university, to pay tuition for example; the research project can be used for doctoral thesis research; the research project consultant can be used for the training program.

In discussing the training experience itself, the Dean shifted from the problems of those doing a degree in his Faculty which were insignificant to the broader perspective of his staff members and Indonesian students studying agricultural subjects abroad generally. His own staff experienced no difficulty in gaining admission to institutions abroad because of careful pre-screening and special language training. With respect to re-entry problems, in Indonesia after the completion of the training, poor acceptance by colleagues and superiors is a problem in many Indonesian universities because staff conditions are very precarious and they are insecure. This is not so at Brawijaya University however. Inappropriate training abroad is sometime a problem but that sometime cannot be avoided as in cases when training grants are restricted to certain countries which do not have institutions providing appropriate training. As alluded to above, one of the potentially most serious re-entry problems is the difficulty in applying the skills used abroad due to the lack of a good work environment in the home institution. This is not always a question of lack of equipment; it can also be psychological. The Dean stressed the need to provide guidance at this stage. The returnees have to be made to accept the realities of life in a provincial Indonesian university which are different from those in their university of study in a developed country. They need to be made to understand that if they are unhappy with the work climate of their home institution, it is their duty to themselves develop the environment they consider appropriate. Donor agencies could contribute to the alleviation of this re-entry syndrome by providing an after-care component to their training grant which would make it possible for the recent graduate immediately to engage in the activities he was trained for on his return. This could be done, for example, by providing funds for needed equipment or other research supported to develop a project of their own.

Dean Soetono is of course familiar with many training award holders. The extent of research skills acquired during their training depends on the level of their training. He is generally satisfied with those returning with a Ph. D. They can accomplish the full gamut of exercises associated with research. The skills of those returning with Master's degree are insufficient for his purpose to the extent that these need to be further upgraded by short courses. Even the best Ph.D. students require at least a couple of years after their return before they become really useful. Experience is an essential ingredient for this.

On the issue of the most important requirements needed to increase the research capability of the Third World, Dean Soetono took the position that generalizations are not possible. One can indeed draw up a check list of important requirements of the type I proposed to him, all of which are important by definition, but their order of importance is related to the needs of specific institutions which can vary greatly from institution to institution within a same country or even within a same region depending on their relative degree of development and the extent to which the requirements are unfulfilled. Some need equipment or funds for basic research; others not. Some institutions even need help to learn how to help themselves. He could draw up a development model for his own Faculty and was confident enough to say that he could implement it in its present status using his own resources. In all probability, that model could not be used by another university. In other words, there is no one or two or three magical items which if provided will automatically increase the research capability of the Third World. There is no one model. If I interpret him correctly, what is really needed to increase this research capacity, is a sound administration with a good capacity for planning and implementation using available resources.

On project support by IDRC, that most useful in the Dean's view is longer term commitment. Thus he would hope for a Third Phase Cassava Project making use of the expertise and experience acquired during the first two phases to work in depth, possibility tying in with the National Cassava Center. This would be a most useful phase from the point of view of the scientific results of the research.

On the involvement of foreign experts, this can be useful if the right persons is recruited but some so-called experts end up being liabilities and more learners than trainers. Even well qualified foreign experts can be a problem because of tension with local staff.

We pass now to a different perspective of the Cassava Project related training program - that of the trainees themselves. There follows a brief sketch of five participants on whom information is available. The first four were interviewed in the Cassava Project Office at Brawijaya University in Malang. The fifth who had filled out the IDRC questionnaire on his training program at CIAT was unfortunately absent on Project related activity in Sumatra. His responses were commented upon by his colleagues. All are currently working towards a doctorate at Brawijaya University. All have similar backgrounds.

They come to the project with an engineer (Ir.) degree in agriculture earned at Brawijaya. All are staff members of the Faculty of Agriculture who joined the Cassava Project after 2 or 3 years of involvement in the university academic programs. There is every likelihood that all will stay on as staff members after their degree work is completed. All except one are involved full time in the Project. All receive a basic salary equivalent to approximately US\$50 a month as members of the government service regardless of their involvement in the project.

1. Mr. Bambang Guritno. He is currently the Cassava Project manager and the senior of this group. After completing his Ir. degree he underwent non-degree post-graduate training at the Agricultural University of Wageningen (the Netherlands) in the growth analysis of plants. He came to the project with 6 years experience in research, 3 in teaching, 2 in administration, and 3 (part time) in extension. His area of specialization in agronomy is cassava crop physiology: planting material. He expects to get his degree in 1982. He is not completely happy with his current degree work. Were he to start over again, he would select another root crop to study (e.g. sweet potato ) and would select CIAT or some Australian university for the theoretical course work because of their more knowledgeable instructors and better libraries and laboratories. Even for the study of cassava, these would provide deeper knowledge which he finds lacking in his present program. There is simply not enough expertise at Brawijaya.
2. Miss Damayanti Adidharma. She joined the project after 1 year of research experience, 2 years of teaching and 2 years of management of student research exercises. Her area of specialization within agronomy is entomology: cassava mites. If she had a choice, she would like to do some of her course work at CIAT to take advantage of their specialists.
3. Mrs. Tjuk Basuki. She joined the project after 2 years of research experience, 3 years of teaching, 2 years in administration as Head Department, and 3 years of management of student research exercises. Her areas of specialization within agronomy is plant bacteriology. If she had a choice, she would like to do her thesis research at CIAT because of better laboratory facilities there.
4. Mr. Abdul Cholil. After completing his Ir. degree, he as Mr. Guritno also spent a year in the Netherlands under-going non-degree post graduate training. He came to the project after 2 years of research experience, 2 years of teaching and 2 years of management of student research exercises. He works on the Cassava Project only part time and in an area different from that of his doctorate research which is fungal taxonomy: Indonesian plant parasitic hypomycetes. He is supported in this by the Cassava Project however although the nature of the relationship is not clear to me. He would want to go back to the Netherlands for both course work and research because of more advanced instruction and facilities there.
5. Mr. J. Hardono Nugroho. He spent 6 months at CIAT in Colombia from November 1977 to May 1978 after the conclusion of Phase I of the Cassava Project. As in the case of the others, he is now doing doctoral research in relation to the Cassava Project which he should complete by 1983. His area of specialization is plant nutrition. He has considerable research experience and has been involved in extension work for 2 years. He has no teaching experience however. We know he was happy with his experience at CIAT. He was not available for comment on his current preferences. According to his colleagues, his current interests are more in the industrial aspects of post harvest food technology, the manufacture of alcohol and fructose sugar for example, which perhaps explains the preference given in his questionnaire response to an industrial country as a better place to get training.



All training grants are of the In-Project variety and provide support for thesis research (experiment), course work at Brawijaya (1 semester) and an honorarium for an Indonesian thesis supervisor. Only one respondent saw an advantage to linking training support to an IDRC funded research project (the training is made more concrete, specific).

All respondents discussed their preference for the location of course work and field research for Third World students in terms of their own personal cases and did not generalize. As mentioned above, all would have found advantages in making use of overseas institutions for professional rather than personal gratification reasons. All pointed to the relative inadequacy of the training potential of their present institution of study.

All expressed satisfaction with the selection procedure. All were guided very much by their supervisors (the Dean I presume) and by a visiting scientist. This advice was sufficient and appropriate. Nothing could be stated but an expression of hope about working on a research project supported by IDRC funds after completing the IDRC award as the Phase II Cassava Project grant period will be over by that time.

All felt that their training program was helping them develop many research skills, especially for practice experiments and data collection, processing and analysis. There were complaints however. They were not too satisfied with the variety of course material offered and the quality of the courses themselves. They were most satisfied with the guidance received in planning their academic program and on the relevance of the training to their careers and research projects at their home institution. In their opinion, their training program is good but not the best: it does not completely support the IDRC purpose of improving the research capability within the developing countries, but "nearly". The training is needed because there is a shortage of trained research scientists in their fields both in Indonesia and at Brawijaya. On the 3 most important requirements needed to increase the research capability of the Third World, there was almost a consensus on the following: (1) laboratory equipment, (2) visiting researchers from other countries, (3) post graduate training awards. They were consistent then in expressing the wish that the IDRC provide funds and advisers to increase the research capability within the Third World. Here as in other similar questions, they were guided in their answers by their own concrete situation rather than by the training needs of the Third World as a whole.

A training program of this kind generates few personal problems as all are on home ground. There was little scope for IDRC staff intervention although mention was made of some "somewhat useful" contacts.

The following are the highlights of Mr. Nugroho's experience at CIAT as reported in his questionnaire form returned to IDRC and commented upon by his colleague Bambang Guritno. As in the case of most grantees who filled out such questionnaires, Nagroho's answers are frequently ambiguous and inconsistent mainly because of his

inadequacy in English: in many instances, he clearly did not understand the meaning of the questions. Guritno's comments helped to set the record straight.

Nugroho was selected for the training course at CIAT by Dr. Dharmaputra, an American trained soil scientist who headed Phase I of the Cassava Project. He took a personal interest in him and provided guidance for the training. The training course lasted one month longer than originally planned. Nugroho attended non scheduled internal training courses at CIAT and because of this was not able to complete his experiments on time. He was generally satisfied with the institution and the courses (over 76% useful in his present job), but did not give the program top rating. According to Guritno, his reservations stem from two factors. First, the courses were very theoretical while Nugroho was interested more in practical applications. He felt perhaps that the training did not help him sufficiently to deal with the technical aspects of the Cassava Project. Secondly, Nugroho would have needed more supervision, hence his complaint about the less than adequate availability of professionals for academic consultation. The instructors were either too busy or there were linguistic barriers to communication. He seems to imply that such courses would be more profitable if taken in Asia by his suggestion to IDRC on how training awards could be better designed in the future: short courses for Asians would be more beneficial if conducted in an Asian country such as Thailand, Philippines, Indonesia, India, etc. This could mean that the content of the training would be more relevant to Asian needs but Guritno's interpretation (or perhaps his personal view) was that as the investment needed to support a six month training course at CIAT would have been sufficient to support two years of training in Indonesia (or in another Asian country), the latter would have been a better investment.

Nugroho adapted very well to conditions at CIAT. The only problems experienced were language and food (Muslim dietary restrictions) but these were not serious. He gave top rating to the helpfulness of IDRC staff in relation to travel arrangements, personal adjustments and health problems, extension to training award and in providing other benefits such as additional travel to attend a conference away from the training institution (Symposium on Tropical Root Crops, Manila).

Although Nugroho's course at CIAT was a non-degree program, it did indeed contribute to a degree. He was given academic credit for it for his agricultural engineer degree (Ir.) at Brawijaya. It is also part of his academic record for the pursuit of a doctoral degree in the same university.

The following profiles are given as background to the Cropping Systems Project (77-0010) related six month training program at the International Rice Research Institute (IRRI) several Indonesian participants of which were supported by the Centre grant. Comments not directly related to this training exercise are also provided because the information illustrates the important university -

Litbang - line agency relationship mentioned above or otherwise deals with main issues of this study, they begin with institutions visited in Ujung Pandang, South Sulawesi.

Hasanuddin University. I had met Dr. Achamd Amiruddin, the Rector of Hasanuddin on a previous visit. He has the reputation of being an energetic and capable administrator and a strong promoter of research, which was also my impression. He was away at the time of my visit and I was referred to the Vice-Rector for Research and Academic Affairs, Professor Hardjono M.D. He provided the information that follows.

The strong faculties of the university are economics, medicine and agriculture. Social sciences are at a middle level of development. The engineering faculty is developing more slowly because the staff is more involved in provincial development projects than in teaching. When a professor takes on such a project he often assigns his team of assistants to it thereby considerably weakening the teaching capacity of the faculty. The university otherwise has a policy of playing a pembina role with respect to weaker institutions in the region and of collaborating with units involving in development activity outside of the university. The University has a Regional Scientific Development Center geared specifically to the latter function.

Current University development plans have the following order of priority: (1) agriculture: this is government policy; (2) the hard sciences (the main weakness of the University), and more specifically, marine resource development related to these; and (3) medicine. The government plans to establish a medical center for Eastern Indonesia at Hasanuddin University. A new campus is currently being built on the outskirts of the city. When it is completed, the buildings of the old campus will be transformed into a teaching hospital. Current medical teaching stresses general practice but specialties are also taught such as surgery, internal medicine, pediatrics and gynaecology, among others.

The Univeristy has a vigorous staff development program underway. 90 staff are currently studying for higher degrees, 48 of whom are abroad. 30% of the latter are doing Ph.D.'s and the remainder, Masters. The main countries of study are Australia (agriculture), Philippines (agriculture and economics), the Netherlands (medicine), and Japan (marine resource development). Those studying in Japan begin by undergoing Japanese language training at the Center for Japanese Language at the University of the Philippines.

Most training support is provided by foreign donors although some is provided by the Indonesian government - 20 scholarships currently. A current USAID grant has provisions for 70 scholarships for higher degrees: 40 for domestic training, 20 for study in the US, and 10 for study in other countries. The Japanese government is providing strong support for the marine resource development program which includes 30 scholarships to study in Japan. Two grantees have returned with Ph.D.'s, one in marine chemistry, the other in agronomy. There is a linkage with Erasmus University funded by the Dutch Government to

strengthen medicine at Hasanuddin. Two local students are studying in the Netherlands. The Dutch send two lecturers to help at Hasanuddin every year for 1-2 months. They are currently developing a program in community medicine which will also include anthropology. In Dr. Hardjono's view, expatriates have to stay longer to play a useful role.

The main problems of Indonesians studying overseas are language and separation from their families. Hasanuddin candidates for scholarship's are given intensive language courses. Those who do well are sent abroad; the others study in Indonesia. There is also an awareness here of the re-entry problems of grantees after completing their studies so that every effort is made to give them assignments directly related to their field specialization on their return. Inevitably however some get pulled into administration as there is a shortage of staff in this category.

What the Vice-Rector would hope to get from the IDRC is first of all staff training support. As he believes that training should be related to research, the training grant could be part of an IDRC funded research project or it could be related to research funded by any donor. Even short courses could be useful providing there is follow up activity to learn to apply the skills acquired, e.g. in a community medicine project. A second request would be for support to attend professional conferences which is difficult to obtain from most donors yet important given the relative isolation of Hasanuddin.

South Sulawesi Provincial Agricultural Office. One of the IDRC sponsored participants of the IRRI training program on multiple cropping, Mr. Syarifuddin Musa is a staff member of this office. He was not available for an interview at the time of my visit as he had left three months previously on an Indonesian Government scholarship to study agronomy in the US (Texas). His IDRC questionnaire responses were commented upon by his colleague Mr. Zubair Suyuthi who attended the same training program under Netherlands sponsorship. Background information on this Office was provided by him and the Acting Inspector (Director) Ir. Radjagaoe A. Basir.

The Provincial Agricultural Office is a line agency of the Ministry of Agriculture concerned with food crops. It has three divisions: food crop production including padi, horticulture and secondary crops; food crop protection; and extension. It is currently involved in two large national programs: the BIMAS Food Crop Project, and the National Food Crop Extension Project. At the local level, the Agricultural Office comes under the jurisdiction of the Governor of South Sulawesi. The function of this Office is not so much basic research as the testing of the results of research and the diffusion of these results to farmers through the Extension Division. This office has relations with both Hasanuddin University and the Maros Station of the Central Research Institute for Food Crops (CRIA). The latter is a regional level institute serving eastern Indonesia (outside of Java). It is said to have many well trained staff including some foreign trained Ph.D.'s mainly in agronomic science but with some animal husbandry and agricultural economics. Their main interests are rice and corn. The Agricultural

Office contract out research to both the University and the Maros Station, test and evaluates the result, and makes recommendations to the farmers accordingly. If the farmers have problems in the application, these are referred back to the research organization for correction.

Theoretically the BAPPEDAS or Provincial Planning Bureau in the governor's office should be the coordinator of this activity. They do collect information about development activity in the province and all organizations involved are required to report to them on a monthly basis. Although they have a staff of 30-40 persons, none are expert enough to give them a capacity to develop research or action programs. This is very different from the situation I saw in the Province of Aceh a few years ago where the Provincial Planning Bureau was actually staffed by faculty members of Syiah Kuala University. The difference is apparently due to the type of personal relationships that develop (or fail to develop) between university and local government authorities.

How does an organization like the Provincial Agricultural Office provide needed training for its staff? There is some very short (2-3 days) in-house training for junior staff by more senior staff. For more serious training e.g. the IRRI program or a Ph.D. program, external funding has to be sought either from the government or from foreign donors. The selection of the candidates is made by the Inspector of the Office and there is a priority system built into the selection. He has to plan for positions to be filled. He selects those of his staff who have at least basic skills that can be upgraded to fill the position to be filled and seeks out a donor who will support the training for this. People in more senior positions will be selected first if underqualified. These lists of candidates are then submitted to the Ministry in Jakarta where they are processed. How did Syarifuddin Musa become a successful candidate for Ph.D. studies in the U.S.? (1) He was the only person at the provincial level with his specialty. (2) He passed the English test. (3) The Inspector agreed to his following the proposed training program. (4) The government provided the grant.

#### Agency for Agricultural Research and Development (AARD)

This Agency sometime referred to as the Central Research Institute for Agriculture (CRIA) is under the Ministry of Agriculture and is based in Bogor. Under its present organizational structure which was approved last year (1979) it groups five central research institutes for food crops, fisheries, animal husbandry, forestry, and estate crops. The respective research institutes have a chain of 99 experimental stations and/or farms and 37 observation stations in different areas of Indonesia. The Head of AARD has the status of a Director-General within the Ministry of Agriculture and reports directly to the Minister. This system has a number of supportive units, one of which is the Central Library for Agriculture and Biology known as the Bibliotheca Bogoriensis (cf. infra). Related to the AARD and at the same level within the Ministry is the Agency for Agricultural Education, Training and Extension (AETE). This agency administers the

training program for AARD staff including the selection of candidates to receive training support. Some 300 of these are currently studying for higher degrees in the agricultural sciences at the master and doctorate level both in-country and overseas. USAID has been a major contributor of funds for this purpose.

Four of the IDRC sponsored participants of the 6 month IRRI training program related to the Cropping Systems Research Project are staff members of the AARD Central Research Institute for Food Crops. (Apparently, the CRIA designation now applies to this Institute alone). I was able to contact only one of these for an interview as the three others were in the field at the time of my visit to Bogor. This was Mr. A. Hidayat, the Head of the Plant Physiology Division of CRIA who was not even aware that his participation in the IRRI program had been funded by IDRC. He provided comments on the questionnaire response of his 3 absent colleagues.

#### IRRI non-degree training program on multiple cropping

The comments on the IRRI training exercise that follow are based on information provided directly or indirectly by the following participants:

1. Mr. Syarifuddin Musa, South Sulawesi Provincial Agricultural Office, Ujung Pandang.
2. Mr. Zubair Suyuthi, South Sulawesi Provincial Agricultural Office, Ujung Pandang.
3. Mr. A. Hidayat, Central Research Institute for Agriculture, Bogor.
4. Mr. I Noer, Central Research Institute for Agriculture, Bogor.
5. Mr. Adjah Md. C Arifin, Central Research Institute for Agriculture, Bogor.
6. M. A. Setiyono, Central Research Institute for Agriculture, Bogor.

All are IDRC grantees except Suyuthi who was supported by another donor. All are agronomists specialized in cropping systems. All are locally trained apparently to the Indonesian agricultural engineer level. All were and remain civil servants involved in R. & D. units. Before taking the training course the groups was divided about equally between research workers and extension workers. Now, two years after the completion of the course, only one of the six remains in extension work. All others have shifted to research. Only 3 of the 5 Centre supported grantees were team members of the IDRC funded Multiple Cropping Project and there was generally no opinion on the advantages of linking a training grant to such a project. There was little awareness (1 out of 5) of the fact that the training program was funded by the Centre. My informants were not able to tell me how or who coordinated the Indonesian participation. It seems that it was done by a local person acting on behalf of IRRI, the recipient of the Centre grant. This was perhaps Dr. S. Effendi of CRIA whom I was not able to meet. There was no evidence of involvement by IDRC

staff. In all cases the selection or approval came from the grantees' institutions. Most agreed that this is how it should be but one opinion on record states that IDRC should make the selection from candidates nominated by the home institution because more people would be given a chance to compete and get the award. All received much and adequate advice on IRRI and the IRRI program from either their supervisors or from a senior staff member of their home institution. All also consulted their families and 4 out of 6 received some advice from IRRI alumni.

The grantees' evaluation of the training received at IRRI is very diverse. Hidayat pointed out that opinions given referred to training needs in relation to present job. What is taught at IRRI is in fact related to the special competency of the instructors there and not necessarily to the trainees' main interest in the field of agriculture. Thus, 3 grantees gave their training a usefulness rating of over 76%, one a rating of 51-75%, and two a rating of 0-50%.

The following table gives a breakdown of opportunities provided by the training to develop research skills:

<u>Skill</u>	<u>Opportunities</u>			
	many	some	very few	no answer
original research	3		2	1
practical experiments	3	1	1	1
data collection	2	2	1	1
processing & analysis	2		3	1
management	1	1	3	1
design	1	3	1	1
other*	1			5

\*to develop a philosophy (theory) of cropping systems.

Three participants found fault with the subject matter of the training program. One found that the course too short: it should have covered the complete cropping system, not just intercropping. A second would have wanted lectures on the interpretation of experimental data. A third who is not interested in this would have dropped the lectures on extension and communication.

Generally however the participants appeared to be reasonably satisfied with the training program. Most were very satisfied with the variety and quality of the course offerings and their relevance to their home country and careers there. Most were only somewhat satisfied with the availability of professionals for academic consultation which reflected also on the guidance received. Hidayat found this response of his colleagues surprising and does not agree, Supervision opportunities were available. If they were not used, it was not the fault of the program. The problem more probably was inability to communicate because of the language barrier. Did they think then that programs of this kind helped to improve the

research capability within the developing countries? Three out of 5 answered yes, completely. One answered nearly and the 5th, only slightly.

Three of the six participants had special interests not covered by the IRRI course and would have opted for special training in these areas rather than cropping systems. These were seed artification on rice, post harvest technology, and volcanic ash soil. In the last case, the training should take place in Japan or in the US where this is taught, and not at IRRI.

All except one of the six experienced some problems during their program at IRRI. All of the remaining 5 had language problems which were considered serious for 2 of them. The solution proposed is special language training. All of these five also stated that they had had financial problems which in all probability tied in with family demands at home. For one this was seen as serious. At the bottom of this is the fact that although all continued to receive their basic government salaries while they were away, they lost the normal salary supplement provided while on the job, which caused their families to suffer. The suggestion made to correct this was that training stipends should be increased to compensate for this loss. Other "average" problems were loneliness and the normal problem a Muslim in a non-Muslim land would have with respect to restrictions on pork. Three of the six had no re-entry problems on their return home, one explained of financial problems which he said could have been avoided with better planning on his part. One complained of lack of equipment at his home institute to apply what he had learned. Could the donor not provide this? Suyuthi of the South Sulawesi Provincial Agricultural Office had serious problems because he was not coming back to an established position. He had been working for the CRIA Maros Station but only on a contract basis. His present position was secured only after his return from IRRI. There was an awkward income gap in between. He suggests that a grant supplement could have been made in his case.

All 5 Centre sponsored trainees stated that they were returning to work on an IDRC funded research project which, I understand, is wishful thinking for 2 of these. All of these also had suggestions to IDRC for support for the training program follow up activity. All wanted support for further research and/or training. Two of these wanted support for formal degree training. One request was for support to attend periodical conferences in his field at IRRI or elsewhere.

There is very little to say on the helpfulness of IDRC staff in relation to this exercise as the respondents were quite inconsistent in their reference to IDRC. Only three commented on this and were perhaps referring to the organizers of the training program. Whoever they were and on this basis, it seems that the organization went smoothly and that effective help was provided for travel arrangements and any personal problems that came up. The training for all was completed on schedule.



Opinions sought on the general issue of appropriate places for students from the Third World to do theoretical course work and field research brought inconclusive answers from the respondents because the question was not properly understood and/or because they were referring to their own special case rather than to that of students in general. I will cite only the responses of the two participants I actually interviewed.

Suyuthi is of the opinion that the best would be a combination of theory and practice both in and out of country as both have something to offer. In training received overseas, he would select an institution in a developing country only if the facilities are comparable to those of an industrial country. He is aware of the problems of doing training in an industrial country. Although the facilities are the best, they do not always provide training in fields of specialization needed in Indonesia, e.g. in tropical crops, which would make them less suitable for some Indonesian students. In other words, training programs should be tailored on an individual basis to meet the specific needs of the person concerned.

Hidayat answered the question on theoretical and practical work in-country or overseas in relation to participants of the IRRI training program in general. He believes that for them, both theory and practice should be done overseas, and at IRRI specifically because all facilities needed are right there. In his own case, given his level of training and his professional interests (soil fertility; nitrogen efficiency), he is interested less in course offerings than in good laboratory facilities and in efficient administration of research. Whether this is found in a developing or developed country is irrelevant. In fact, he has applied for Ph.D. level training at the University of Florida and would indeed be grateful for IDRC funding to pursue this.

On the 3 most important requirements needed to increase the research capability in the Third World, the answers of the respondents were so diverse and lacking in agreement that no discernable pattern can be detected. Every single one of the 15 items proposed for consideration was picked up by somebody and the spread is so wide that even ranking is impossible.

I have noted from the ASRO files that the AFNS Division has provided training support to 8 Indonesian participants of the Fish Parasites Project (73 - 0147). All received training abroad: in Canada, the U.K., the US or Israel. Three of the trainees earned an M.Sc. The training period extended from 8 to 15 months for 5 of the trainees. For the remaining three it was 2 to 3 months. I have no further details on this exercise.

## B. SOCIAL SCIENCES DIVISION

### Gadjah Mada University, Yogyakarta

Gadjah Mada University has been a client of IDRC for many years. It has been visited regularly by SS Division program staff and has been the recipient of several Centre grants. The University has a fairly strong training potential and several Centre grantees are

currently undergoing training there. The Rector of the University, Dr. Soekadji Ranuwihardjo provided me with an overview of the present status of his university and discussed a number of issues central to the present study. Several of his views have already been incorporated in previous sections of this report. He is one of the most distinguished academicians of Indonesia and, I believe, a very reliable guide for the formulation of IDRC policy for this country.

Gajah Mada is the largest and strongest university in Indonesia. It currently has a student body of approximately 17,600 and a staff of 1,300. Sixty-two of these staff have Ph.D.'s 80% of whom are foreign trained. Economics is disproportionally represented in this group however and accounts for 25% of the total. This is due mainly to Rockefeller Foundation and earlier Ford Foundation support for staff development in this Faculty which lead to the launching of a Ph.D. program in economics in 1976. University staff also include 200 foreign trained masters. These assets notwithstanding the overall strength of the staff is still not adequate as less than 5% have Ph.D.'s and only 15% are trained to the Master's level. Staff development is proceeding apace however as 90 staff are currently studying abroad, 35 at the Ph.D. level and 55 at the Master's. The emphasis is on the agricultural sciences.

Professor Soekadji considers that (1) the agricultural complex faculties, (2) the social sciences and economics faculties, and (3) the humanities faculty are the main areas of strength of Gajah Mada in that order. Medicine and engineering are lagging. As in the case of Brawijaya, faculties such as engineering get depleted because staff accept outside assignments commissioned by the Government and others. There is a need for further development in the field of science, he feels, to accelerate the transfer of modern technology to Indonesia.

As mentioned previously, a World Bank loan for university development with a heavy training component is currently being negotiated by the Indonesian Government and is expected to become available in 1981. This is for the development of 6 Faculties; engineering, science, pharmacy, geography, biology and economics, in three universities; Gajah Mada, University of Indonesia in Jakarta, and Andalas University in Padang, West Sumatra.

Professor Soekadji knows IDRC well, and as a friend of the Centre he offered the following weighty advice:

- (1) The role of IDRC in supporting research in Indonesia is becoming trivial because of the massive funding provided by others. The Centre could play a much more important role by supporting training for research.
- (2) IDRC should concentrate more on less developed provincial institutions rather than try to develop activity at Gajah Mada or other similar more developed universities which can find funding without much difficulty. In order to do this well, more effort should be made to get a better understanding of universities and their problems.

- (3) Short courses to upgrade in-country research potential is a waste of time and money. Soekadji was clearly referring to the 2 week programs sponsored by the Ministry of Education.
- (4) First priority should be given to the support of training in-country as a spring-board to higher education abroad. Many Indonesian students could not survive a graduate studies program abroad. Language is a big factor but also the lack of intellectual tradition. Books gather dust in Indonesian libraries and are not read even by instructors. The graduates of this system will provide at least a nucleus for development in their own institutions. Those who emerge as quality students should be selected for higher training abroad. One should be aware however that overseas training in an industrialized country does not automatically produce relevant training. The example used by the Rector was in the field of medicine. What is needed in Indonesia is community medicine focussing on the rural poor. Very few foreign trained Ph.D.'s in medicine come back with useful ideas in this area. There is a need to plan overseas training programs most carefully therefore, one should also encourage these overseas students to conduct their thesis research in their own country.
- (5) In announcing its support for training, IDRC would of course state its priorities but this should be negotiable. The universities concerned should also be heard on their specific needs.
- (6) No overall self-administered training grant should be made directly to institutions. There can be too much trust. A check and balance system is needed which is best achieved by co-responsibility involving both the institution and IDRC.
- (7) IDRC needs to develop its own mechanism of evaluation of potential training grant candidates. Indonesians are not prone to objective evaluation procedures or to cost-effectiveness considerations. Those more likely to be presented are more senior candidates: seniority is a most unreliable criterium of suitability for higher studies. Beware especially of letters of recommendation. Indonesian grant recipient hopefuls like to use influence and the reason for the support of an application is more frequently considerations of family connection and the like than academic ability.

#### Training Center for Remote Sensing.

This center which several had brought to my attention as worth investigation operates as a Dept. of the Faculty of Geography. The other seven Departments are geomorphology, hydrology, cartography, population geography and demography, regional and political geography, economic and resources geography, and social geography. Out of a staff of 60, four of the Faculty staff were trained abroad: one Ph.D. and 4 Masters. The remainder all have a local doctorandus degree. Seven of these are now working towards a local doctorate (old style) with some upgrading in collaboration with a Netherlands university. All have been to the Netherlands from 6 to 12 months to prepare their theses. research under Dutch instructors.

The remote sensing training program has been in operation since 1977. It is a non-degree program for the staff of various government agencies. Its purpose is to meet the needs of government in development programs. The program is geared to handle classes of 30 trainees over 8 month periods. In fact, never more than 27 of the available slots are filled. Candidates with undergraduate background in one of the earth sciences (agriculture, geology, forestry, etc.) are accepted. Prospective trainees are selected and sent by government units interested in this training. No tuition is charged and the participants are supported by the government departments in which they hold positions. A general budget is provided by the National Coordinating Agency for Surveys and Mapping. Instruction is provided by Gadjah Mada University in collaboration with other institutions: the National Institute of Aeronautics and Space, the Bogor Agricultural University, the Bandung Institute of Technology, and others. These 8 months of training are not seen as sufficient for the graduates to be able to practice independently. They usually work in support of fully trained practitioners of remote sensing.

No outsiders have been admitted to this program but non are excluded in principle if they are willing to pay tuition. Five students from Malaysia are currently being considered for admission.

There are plans to upgrade this course to a 2nd cycle MSc program in about 2 years. The major constraint at present is the shortage of staff. A minimum requirement is six additional instructors, one with a Ph.D. and five M.Sc's. All should be full time and regular Gadjah Mada staff, not visiting instructors.

Faculty of Economics. References are made to the new doctoral program of this Faculty in earlier sections. Started in 1976, it is currently being run by a staff of 12 Ph.D.'s who are regular faculty members of the University plus two visiting expatriate professors supplied by the Rockefeller Foundation. The Faculty offers four majors: economics per se, agricultural economics, business administration, and accountancy. There are currently 20 students in this Pasca Sarjana program. They come from all over Indonesia and enter the program with diverse academic backgrounds, not only economics but also engineering, agriculture, forestry, etc. As mentioned previously, this weakness in academic preparation has caused problems and is the main reason why no doctoral degree has yet been granted inspite of the fact that the program was launched in 1976. Three of these students are being supported by IDRC funding through its grant to the ADC Regional Research and Training Program. One of these, Mr. Wargono Adisoewignyo, filled out and returned the IDRC Trainee questionnaire and was interviewed by me in Yogyakarta. A report on the information provided follows.

Mr. Wargono Adisoewignyo, IDRC/ADC-RRTP grantee.

Although Javanese by birth, Wargono was and continues to be a staff member of the Faculty of Economics of Mataram University in Lombok, one of the Indonesian Eastern Islands group, east of Bali. He had taught at this university for 7 years at the time he began his Ph.D. program at Gadjah Mada and had been the Dean of its Faculty of Economics. This Faculty then had a staff of 30, most of them very junior. Wargono's original plan was to do his degree at the Australian National University. Thanks to the recommendation of an ANU professor, he had been accepted as a post-graduate student there and was to begin his studies in 1975

under a Colombo Plan scholarship. This was vetoed by his Rector however. He then applied for and received an ADC-RRTP fellowship to study at Gadjah Mada. The selection was made following their procedure by a selection committee composed of ADC staff and some Southeast Asian scholars. The award was made in 1979 and is due to terminate in January 1981.

Wargono's area of specialization in his Ph.D. program at Gadjah Mada is agricultural economics with a minor in labor economics. His academic background includes a doctorandus degree in economics earned at Brawijaya University in 1971, a 10 month agricultural economics workshop at Gadjah Mada in 1973, and another 10 month course in economic theory upgrading in 1978. His only work experience is the teaching and administration mentioned above. He did no research.

As mentioned above, his first choice of an institution was the ANU which was selected on the advice of a visiting professor from ANU at his home university. Wargono makes the point that such advice is much needed by Third World students contemplating studies overseas. In the choice of Gadjah Mada, he was guided by his Rector and the ADC Fellowship Officer primarily, but also by a senior colleague and another award holder. There was no difficulty in gaining admission to Gadjah Mada.

Wargono is experiencing few personal problems at Gadjah Mada. Only two are mentioned. The main problem although not a serious one is inadequate academic preparation. He also has some difficulty for reading or following a seminar in English but he is otherwise fairly fluent.

He does not give top rating to the Gadjah Mada doctorate program: it is generally alright but not excellent. He declares himself not too satisfied with the availability of professionals for academic consultations or guidance in planning his academic program. The main problem then is the lack of adequate supervision. The instructors take on too many assignments. Students are on their own, even for the choice of readings in English. For everything else - variety, quality, relevance of course, etc - he is only somewhat satisfied. On the skills developed so far, he places most emphasis on the ability to participate in original research, and, to a lesser extent, ability in data processing and in research design. Very little has been learned so far in the way of conducting practical experiments, data collection and research management. This is yet to come. In his opinion, the most important single benefit derived from his training is improved logical thinking making it possible for him to construct an empirical model to study economic phenomena.

If he had the choice and if he were starting over again, he would choose the same subject but a different institution. As a matter of fact, he is actively planning to go to ANU next academic year. His admission is still valid there and he hopes that his Colombo Plan scholarship can be reactivated. If and when this happens he will give up his ADC fellowship.

Wargono had no contact with IDRC staff as none were involved in the management of his training program. He did comment on the ADC staff involved however. They were very helpful in providing

academic advice (probably ADC Associate William Collier of the Agricultural Economics Dept. at the Bogor Agricultural University) and in making it possible for him to attend conferences away from the training institution. They were also helpful by increasing his stipend in line with the cost of living index in Indonesia.

On more general issues, Wargono would favour having IDRC training awards connected to IDRC funded research projects. What he really means however is that theoretical training should be complemented by field research. For Third World students, the best training would be to have theoretical course work done overseas in an industrial country and field research done in the home country. He favors an industrial country as a place to study to have the advantage of making comparisons with their own country and being able to choose that which is more suitable. For the selection procedure to receive IDRC training grants, the best is that of home institutions nominating candidates to the IDRC who then interview them and choose the most acceptable. The three most important requirements needed to increase the research capability of the Third World are (1) post-graduate training awards, (2) opportunities to exchange ideas at international meetings, and (3) more communication between researchers and those who will be affected by the research.

Wargono had a few suggestions to make as to how IDRC training awards could be better designed in the future:

- (1) Provide course supporting texts and other reference material not easily found in developing countries but readily available in the West.
- (2) Make allowance in the budget for an honorarium for a senior supervisor to give intensive guidance to IDRC grantees. These payments are not required but appropriate in the circumstance.
- (3) Grantees should be able to take some intensive special courses in more developed institutions overseas.
- (4) The IDRC should make a special effort to provide the staff of isolated universities outside of Java with training opportunities.

Some information on another ADC-RRTP grantees is available for comparison. This is Mr. A. Cholig a Ph.D. student in agricultural economics at the Agricultural University in Bogor. As Mr. Cholig was not available for an interview at the time of my visit, I will only present the highlights of his questionnaire response in the light of other general information I was able to gather.

Cholig came to the program with a degree in agricultural engineering from Pajajaran University in Bandung. On graduation, he joined the faculty of the university where he was involved in teaching and research for 5 years. He applied for and received an ADC fellowship for a Master's program which was processed in the usual ADC manner. He complains that his study grants should have been for a Ph.D. and not for a Master's only. His present status is that of a Ph.D. student with funding from other sources.

In another case, he appears to be completely satisfied with his training program. He received much advice both from his supervisor at his home institution as well as from ADC staff. He had no problems while studying except for some family demands at home. His only reservations on the training program are on the quality and relevance of the courses read at Bogor and an access to technical literature. On this he is only somewhat satisfied. For everything else he is very satisfied. He claims to have had many opportunities to acquire research skills with the exception of those needed for practical experiments and data collection which, as in the case of Wargono, must probably await the thesis research phase of his program. The acquisition of skill in research is seen as the main benefit of his training.

It seems that the main factor explaining the difference between the satisfied graduate and the fairly disgruntled Wargono is the presence of ADC Associate Collier in the Bogor Department of Agricultural Economics. The Departments of study of both are comparable in academic strength and the staff of both are equally overcommitted because of external demands on their time. Collier is the only staff member devoting all of his time to his students and he obviously gave much attention to ADC grantee Cholig.

ADC Regional Research and Training Program (79-0056). It is appropriate to note in this context that the Centre support for the ADC Regional Research and Training Program (RRTP) represents by far its most important single contribution to research training in the Asian region both in terms of investment and productivity and training. The five Centre grants to the ADC for this program from 1971 to 1979 total more than \$2 million. The RRTP has five components: (1) fellowships for study in the region, (2) seminars, conferences and workshops, (3) preparation of teaching materials and publications, (4) visiting professorships, and (5) research support. Of these, the fellowship component has been the most important and most successful because of effective administration by the ADC Fellowship Officer and support from the field by ADC Associates. The two preceding examples of grantees support this. The program has concentrated on the rural social sciences with a very strong emphasis on agricultural economics.

Eighteen Indonesian students have been the recipients of RRTP fellowships drawing on the IDRC grants to ADC for training in the Asean region, some of which are still in progress. Six of the awards were for Ph.D. programs and the remaining twelve were for Masters. With the exception of four, all were for training in economics. Nine of the awards were for study in-country: 3 at Gadjah Mada University and six at Bogor Agricultural University. Of the overseas awards, five were for the Philippines (UPLB and UP Diliman), three for Malaysia (Science University Malaysia, University of Malaya), and one for Thailand (Thammasat University). Three of the awards were made to participants of IDRC funded research projects: one to Satya Wacana Christian University in Salatiga, Central Java (Irrigation Systems - 74-0066), and two to the Agro-Economic Survey in Bogor (Rural Dynamics Study West Java - 77-0063)

Population Studies Centre, Gadjah Mada University. This Center was established in 1973 as an interdisciplinary research institute to contribute to the understanding of Indonesia's population problems, to

contribute public awareness of the nature and extent of these problems, and to assist in devising means for their solution. The Center promotes these goals through research, a publications and translation program, seminars and research workshops, and the development of an up-to-date reference library. Dr. Masri Singarimbun, an Australian trained anthropologist and current Director has been the driving force behind this very successful and productive organisation. He has been able to recruit excellent staff from various faculties of Gadjah Mada and has attracted visiting staff from other Indonesian universities as well as foreign universities. I believe that much of his success is due to the good use he was able to make of expatriate visitors, some of whom have stayed for years.

A current main activity of this Center is the Population Research Training Program (P RTP) which began operations in April 1977. Its purpose is to support population institutes in universities throughout Indonesia by helping them develop a research capability. This service is also extended to individuals and other private and public bodies who request it. Advice provided extends to all phases of the research process: preparation of the research design, data analysis, writing up and dissemination of the research results. Currently, an expanded version of the P RTP takes the form of comprehensive activity leading to the execution of nation-wide research networks with a strong training component. There is a Population Research Awards Program. Assistance is provided for the preparation of the research design. When the data gathering phase has been completed all join a workshop on data analysis. In due course this is followed by a second workshop on the presentation of research findings through the preparation of articles and reports for dissemination.

IDRC supported projects have benefited from the services of the PSC in several instances. Those that have come to my attention are the following:

1. Southeast Asia Population Research Award Program (SEAPRAP) funded jointly by the Ford Foundation and by IDRC (Phase III - 77-0137). There was no formal linkage between this program and the P RTP but several of the young Indonesia grantees were able to take advantage of this resource and greatly benefited from it. The Director of the PSC is currently a member of the SEAPRAP Selection Committee.

2. Community Health (76-0183)

3. Integrated Population Programs (79-0058). In the case of the last two projects, the Centre grant recipients used the PSC to provide the expertise they lacked for the preparation of the research design and for data processing. Initially this consisted of individual consultations only. Eventually however, more formal training sessions were provided in the framework of the regular activity of the P RTP. The PSC sought to formalize these arrangements and entered into negotiation with the SS Division for IDRC support for the P RTP. This led to the approval of the Research Methodology and Training Program grant (79-0143) to the Population Studies Center of Gadjah Mada University which was in the last stage of processing in July 1980. I have had no direct contact with the IDRC project team members who have received training from this program but my understanding from Centre program officers involved is that it has been very useful.



Because of its effectiveness, the Population Studies Center has been the recipient of fairly substantial funding over the years from both the Indonesian Government budget and from overseas sources. The latter have included the Rockefeller Foundation, the Ford Foundation, US-AID, the Australian-Asian Universities Cooperation Scheme (AAUCS), the East-West Population Institute, the IDRC (Resettlement and Transmigration, 75-0052), and the United Nations' Fund for Population Affairs (UNFPA). The more important funding (UNFPA, US-AID) comes under the control of the Indonesian National Family Planning Board (BKKBN) however and this is a source of endless bureaucratic delays. The PSC would hope then that IDRC funding for population research in Indonesia be also integrated with the Training Program to give it more flexibility.

The Institute of Rural and Regional Studies, another interdisciplinary research center of Gadjah Mada University also has a similar research training scheme funded by Rockefeller Foundation. The program is designed for junior faculty and each course is of one year duration. The first three months is spent on theoretical course work and the development of a research design. All then engage in research on a common theme under faculty supervision during the rest of the year. The stress is on interdisciplinary research in a holistic perspective. The current year is the fifth of the program. The following are themes of recent years:

- Peasant response to integrated development programs initiated by government.
- Relationship between peasant perception and adoption of new technology.
- Popular participation in rural development.

As all Rockefeller Foundation programs at Gadjah Mada will be phased out by 1983 this Institute is looking for other sources of funding.

#### Southeast Asia Population Research Awards Program - SEAPRAP (77-0137)

This awards program designed for junior scholars interested in conducting research on population issues was launched in 1974 under joint IDRC-Ford Foundation funding. It was conceived basically as a training exercise, the training input being supplied by a senior adviser and by the program coordinator who would visit the grantees periodically and respond to their training needs. The program responds to applications which are screened by a committee of Southeast Asian scholars. The program has made approximately 100 awards averaging approximately \$3000 each since its inception to grantees in most countries of Southeast Asia. Priority has been given to the most disadvantaged junior scholars in provincial universities but several awards were made to Southeast Asian Ph.D. students in Western Universities to support their thesis research in their home countries.

The program has generally had a good track record but on the evaluation it was found that in many cases the adviser support was too weak. Although many applications were received from Indonesia, not many applications could compete successfully for the awards due to their weak academic background and inability to formulate an adequate research design. It would mean that the Gadjah Mada University Population Research Training Program just described is better suited to the needs of Indonesian junior scholars.

Social Research Training Indonesia (74-0067). This program to upgrade the social research skills of junior faculty in Indonesian universities was launched as a Ford Foundation initiative in 1974. Three training stations were set up in local universities, the first in 1974 at Hasanuddin University in Ujung Padang (South Sulawesi), the second in 1975 at Sjah Kuala University in Banda Aceh (Aceh, Sumatra). These are rural stations. The Jakarta urban station was launched with IDRC funding in 1976 at the Faculty of Social Sciences, University of Indonesia. The program has been coordinated by a committee of distinguished Indonesian social scientists set up by the Ford Foundation. This committee has evolved into what is now known as the Yayasan Ilmu Ilmu Sosial (The Social Sciences Foundation). All stations follow the same format: an Indonesian Director assisted by an expatriate Associate providing a one year training course to 12 junior faculty on leave from their institutions. The selection of the trainees is made from applications which are processed by the Yayasan. A typical one year course is divided into 3 parts more or less equal in length. The first four months are spent on theoretical course work and the preparation of individual research designs. The second 4 months are spent on field work. Data analysis and the preparation of the research report occupy the last 4 months.

To-date, 180 junior faculty have received this training (48 in the IDRC funded Jakarta Station). The best of these were selected by the Yayasan for formal degree training on scholarships provided by various donors. The others returned directly to their home institutions to resume their duties.

The main problems of the program have been the low level of academic preparation of the candidates taking the course. The trainees themselves would have wanted more course work and less time spent on field research. The fact that this is not degree training has also caused dissatisfaction. Another important problem is the lack of follow-up for most. The level of training provided is too low to make it possible for these graduates to work independently on their return to their home institutions where in most instances there is no senior staff to assist them. The Jakarta Station has provided a measure of after-care and the Yayasan perceives the need to keep in touch with alumni, but they are still largely left to their own devices.

A suggestion was made at the Yayasan Executive Committee Meeting. I was invited to attend in Jakarta to remedy this situation. Interested senior expatriate scholars would be invited to execute research projects in Indonesia on topics to be decided upon in consultation with Indonesian scholars. This would be done with the prior understanding that the projects

to be directed by the expatriates would have a training objective as well as research and the junior counterparts would be graduates of the social research training stations. It was further suggested and recommended that the IDRC pursue its interest in supporting training through research by recruiting and supporting such interested foreign scholars who would not just do research but also function as educators.

This suggestion in a sense goes back to a suggestion made by Clifford Geertz in his consultancy report to the Ford Foundation in the late 1960's on the setting up of the then proposed program. His proposal was to involve Indonesian trainees in the Ph.D. research of American graduate students. In my discussions with the Directors of the three training stations at the time the Jakarta Station was being set-up in early 1976, I suggested the possibility of an alternate strategy to that being followed at that time which virtually coincides with what is now being proposed: the Directors and their expatriate Associates would formulate and execute a major research project associating the trainees with all the steps of the research activity. The assumption was that being involved in all of the exercises of a project correctly executed, they would be better trained to undertake a project on their own the next time around. This suggestion was not accepted however as it was considered that the formulation of a research design was part of the learning process and this would be lost if the trainees merely executed a research design prepared by the senior officers of the stations. And so the trial and error approach prevailed and the emphasis of the training continued to be correction of the error of the trainees by the trainers.

There has been a feeling in the Yayasan over the last couple of years that the training program in its present form has outlived its usefulness. The number and quality of applicants has been going down steadily. The decision now is to phase this program out in the next couple of years and to concentrate on the development of social science Magister programs in selected universities. The strategy to do this is modeled on the format used in the present training stations and will draw on their experience: one Indonesian Director and one or more expatriate Associates. They also hope to make use of the present program alumni currently studying for higher degrees.

In Yogyakarta I was able to contact the one alumnus whose continued study was supported by the Centre through the Human Resources Program (Post Project Award), Mr. Petrus Soedarno, a staff member of the Department of Economics, IKIP Sanata Dharma (a private Catholic Teachers' college), Yogyakarta.

Soedarno applied for and received a Centre Post Project award to do a Master's degree at the University of the Philippines at Los Banos (Graduate School, College of Economic Development and Management) after completing his year of training at the Jakarta Social Research Training Station in 1977. A former seminarian, he did the equivalent of a Bachelor's degree in Scholastic philosophy. Other previous training includes a doctorandus degree in education (teaching economics), a one year non-degree course in rural development, a 4 month course in personnel management, and a 2 month course in production management. He has 8 years of teaching experience, 1 year of research and 1 year of administration.

His training at UPLB began in April 1978 with a summer course in English and economics. His formal degree program began the following June with agricultural economics as his major and rural sociology, his minor. His course work was completed in March 1979 but he was not able to take the final written and oral examinations until January 1980 because of the absence of his faculty committee members from campus. It seems that in the Philippines as in Indonesia, university staff devote much of their time to supplementing their income from non-university activity. Soedarno is currently doing his thesis research in 2 village communities in the Yogyakarta area on the topic: change-over from estate farming to individual small-holder system and its socio-economic impact on the population concerned. He anticipates that this work will be completed by October 1980, 7 months behind schedule but through no fault of his own.

Soedarno was advised mainly by the senior officers of the Jakarta Station on the choice of a training program but this advice was inadequate he feels. More information would have been needed on possible choices of institutions and countries and their characteristics. It was to a large extent a blind choice between Thailand and the Philippines with his own family contributing most to the decision of going to the Philippines. All turned out for the best however. He had no difficulty in gaining admittance to UPLB and this is the institution he would choose if he were to start over.

He had no serious problems at UPLB and no problems at all for finance, health and location. Other problems resulting from being in a strange country and away from home were simply average. He was very satisfied with the training received at UPLB from the point of view of variety, quality and relevance of the course. The problem was not the lack of course offerings but the time to take them all. The most serious short-coming which caused him to be not too satisfied was the lack of availability of professionals for academic consultations, hence he did not get enough guidance in planning his academic program and field research. As for services provided for non resident students, he found the facilities and management poor. Access to technical bulletins and reference materials, he also found wanting. Even with access to the IRRI library, there was too much demand for too few books.

Soedarno stated emphatically that he had many opportunities to develop all of the skills related to all phases of research and cites this as the single most important benefit of the training provided by IDRC i.e. to develop a capability to do research. All subjects involved exercises in data collection and analyses. Other benefits include the acquisition of intellectual discipline for the organisation of one's time and work and improved speed and comprehension in English reading. IDRC's purpose of improving the research capability within developing countries was completely achieved in his case.

Soedarno has glowing praise for the helpfulness of IDRC staff in supporting him during his program and for this full credit goes to the HR group and their human touch in dealing with his problems. He charitably did not refer to the anguish caused by the initial delay in processing his grant due to an incredible situation of confusion in the SS Division over his case. If I remember correctly, he received an advance

from the Ford Foundation to buy an airticket to get to Los Banos in time for the beginning of the course and he had to incur debts in order to support his family before the grant funds were received. Things went well however once everything was sorted out. His stipend was increased in line with the rate of inflation. Airfare was provided to allow him to fly home to visit his son when he was hospitalised. His training award was extended to cover the delays mentioned above. No academic advice was provided by IDRC staff as it was felt at the time that this was the responsibility of the senior officers of the Jakarta Station and that it would have been inappropriate to interfere.

Soedarno received considerable support from his home institution (IKIP Sanata Dharma) in the form of advice, encouragement and even loans. He remains bound to this institution as he was given study leave (without pay) with the condition that on his return he serve double the time he was away. Soedarno does not find this onerous and has no desire to change institutions. His explanation: he likes to work with students in whichever institution.

On more general issues, Soedarno sees advantage in having an IDRC training award connected to an IDRC funded research project as prospective candidates can be evaluated better from direct observation of performance before the selection is made.

The best selection procedure for IDRC training awards is for the institution to nominate the candidates who are then interviewed and selected by IDRC staff. This is the best way to satisfy the needs of the institution. In the case of Soedarno's award, he was nominated by the senior officers and interviewed by IDRC staff (myself). I found him acceptable but relied more on the evaluations of these senior officers (one of whom was an IDRC consultant) than on the interview to recommend him to the SS Division for the grant.

Soedarno is of the opinion that for a training program such as his, course work should be done overseas (more advanced theory, better facilities than in Indonesia), but research should be conducted in the home country (application of theories to solve problems there). As for institutions in a developing country vs. institutions in an industrial country, Third World scientists should be trained at the Master's level in a developing country and at the Ph.D. level in an industrial country. At the Master's level there is a need to learn theories that are directly applicable to one's own country and this is best found in a developing country. For more advanced work at the Ph.D. level however, better professors, libraries and facilities are needed, hence the choice of an industrial country. He believes that support for this kind of training would be the most useful way for IDRC to increase the research capability of the Third World.

Soedarno's choice of 3 items most important to increase the research capability in the Third World are more an expression of his personal needs at this stage of his training. They are (1) more short courses on research methodology, (2) funds for basic research, and (3) more exposure and experience at other research institutions conducting similar research.

Rural Dynamics Study - West Java (77-0063)

Dr Rudolf Sinaga, Project Leader

The Rural Dynamics Study (RDS) is a project of the Bogor based Agro-Economic Survey, itself a loosely defined body attached to the Bureau of Planning of the Ministry of Agriculture. Over the years however it has grown in importance to the point where it eclipses its parent body in influence and effectiveness. Initiated in 1968 with strong involvement by the Ford Foundation and the ADC, the RDS became a recipient of a Centre grant to support its research activity in 1978 which was made retroactive to July 1977. Although this grant had no training component per se, the proposal was presented as part of a package including a strong training component under Ford Foundation, ADC, USAID and other funding. Both components were very well articulated and I believe very successful. I give most of the credit for this to the dedication and sound management of the Project Leader Dr. Rudolf Sinaga and the support provided by 2 ADC Associates, William Collier initially and, in the last 3 years, Ben White. As a research exercise, this project had little in common with the problem plagued research activity described in an earlier section as being more or less typical in Indonesia. Senior and junior members functioned as a team from beginning to end, fully involved in all phases of the research. All project activity including the preparation of reports was the subject of discussion on an on-going basis by all members of the team. Although the RDS has no formal link with the Bogor Agricultural University, the fact that Sinaga is an Associate Professor of its Department of Agro-Economics and that both ADC Associates were also staff members gave an academic quality to the research and the participants received considerable academic benefit from the experience. As the RDS unit has its base in the Ministry of Agriculture, the connection to decision making was very strongly articulated.

The success of the project as a vehicle for training is rather remarkable. All junior members of the team were agronomists with an engineer degree or less when they were recruited. There were 25 of these in 1975. Because of favourable working conditions and sensible salary supplements, all stayed on. From the beginning of the project period, Sinaga maintained the practice of keeping 5 of the team in training on a rotating basis and 20 actively involved in the research project. All have since become trained social scientists including 2 Ph.D's and most of the others M.Sc's. All except 3 are in agricultural economics. The others are: 1 in agricultural development, 1 in sociology, and 1 in sociology/extension. Two so far have studied abroad, one at Science University Malaysia and the other at ANU. The others studied in Sinaga's own Agricultural Economics Department in Bogor. The last four to receive formal training will leave soon for the Netherlands, Philippines and Australia.

I am not sure that the merit of this project is well reflected in the IDRC project file. By bureaucratic standards, the grantee is delinquent. The final official research report due to IDRC is long overdue and given Sinaga's workload, it is difficult to say when it can be completed unless technical assistance can be provided. On the other hand, the data generated by the project have been used to produce reams of technical reports that have found their way directly to policy makers in the Ministry of Agriculture for immediate implementation by the line agencies, and this at their request.

Rudi Sinaga explains this situation. The RDS team is currently the only group in the Ministry with a reasonably strong social science research capacity, the need for which is being increasingly felt especially as issues such as more equitable income distribution acquire priority status in government policy. The CRIA complex of Central Research Institutes is staffed by technicians who have little to offer to address these issues. CRIA has one Ph.D. in Agricultural Economics on its combined staff and other related staff are completely inexperienced. Their Cropping Systems project (77-0010) is executed from a purely agronomic viewpoint with no socio-economic dimension. New technologies are created or introduced but there is no meaningful follow-up due to the lack of a social science component in the exercise. Estate agriculture analysis is done by amateurs and is of little use. The RDS team is currently swamped by requests by the technicians to come up with meaningful data and it is unable to satisfy all requests.

Sinaga discussed some of his problems. Indonesian engineers in agronomy get one or two courses in social science during their training but have little awareness of its significance. They tend to isolate themselves and have no dialogue with social scientists. Policymakers in the Ministry tend to be dominated by agronomists and not be aware of the potential role of social science. To make matters worse, social scientists tend to get in trouble with policymakers because they are frequently critical of government policy. The technicians on the other hand do not criticise. They are therefore more acceptable and more consulted. Policymakers tend to stay in power a long time however and they are gradually learning that the technicians cannot solve all problems. Economists, but also sociologists and anthropologists are beginning to be sought out and heard.

In the light of his experience, Sinaga sees much advantage to having a training program tied to a long-term research project rather than to a loose scholarship program. Objectives are clearer and more concrete and trainees are better motivated. Research and training budgets should be related but separate with flexibility provided for the timing of each. The training should be degree training in principle but there should also be provisions for short-term training where appropriate. An example of this is the intensive three-month training program given to the staff of Jember University (East Java) who are replicating the RDS West Java study in their area. This was done for a specific purpose to increase their ability to do what they have been doing and will continued to do under the direction of senior advisers during the remainder of the life of the project.

On broader training issues and for social science, Sinaga favours doing course work abroad and research in the home country. In some cases, training in some fields is not available in Indonesia and in most cases, training facilities in Indonesia are strained to the limit. For Master level training, his choice is Asia. His preference is the Philippines but Australia is also good. He sees no advantage in studying in an industrial country for a terminal Master's degree, but for a Ph.D. yes. In practice there is not always a choice. Some donors specify where their funds for training can be used.

On the problems of studying abroad, none of his people have had difficulty in adapting to a foreign country and none have failed in their studies. Anticipating such problems all of his staff must submit to a psychological test before they are hired. Language is usually a problem for a while. He would want donors and host institutions to be more flexible on English proficiency requirements for trainees before they leave Indonesia. There are much better opportunities to study English abroad and it should be done there under study grant support. Family problems are usually serious. There should be provisions for a family allowance in the study grant and a married student should be supported to bring his wife with him if he is to be away for more than a year as in the case of Ph.D. students. As to re-entry problems, there are many factors which are beyond control that influence the performance of graduates on their return but all invariably come back with more confidence in themselves.

Sinaga definitely sees a role for IDRC staff in a training program. They should keep in touch with the trainees, visit them and discuss their personal problems. They should not interfere however with the substance of the training program once it has been agreed upon, nor with the relationship of students with their training institution. In the case of RDS trainees, any intervention should be made in consultation with RDS authorities. There was no place for an IDRC role in the present training program as, no IDRC administered training funds were involved. This role was assumed by Ford Foundation and ADC staff for their respective grantees.

#### C. INFORMATION SCIENCES AND HEALTH SCIENCES DIVISIONS

Neither the IS Division nor the HS Division have been involved in substantial degree or non-degree training support in Indonesia. Whatever support has been provided was in the form of exposing practitioners to on the job experience in more developed centers, seminars and workshops, or specific ad hoc short-term training related to the execution of IDRC funded research programs. The TECHNONET Project has of course conducted many training exercises for the member organisations of its network but it has been of a very special nature and can hardly qualify as training for research as discussed in this report. It should probably be the object of a separate evaluation. Several persons were interviewed however, who had had some relationship to IDRC funded projects in both fields. There is little to say on the training support provided, either because few of the trainees were actually met (only one in HS actually) or because the training exercises were so limited. The main purpose of the comments that follow then is to provide some insights on institutions and their work environment, the research interests of the person involved, their perception of their training needs and how they can be met.

To begin with the Information Sciences Division and excluding TECHNONET ASIA for the time being, three regional activities supported by the Centre of relevance to the concerns of this study are:

(1) International Serials Data System ISDS-SEA (76-0027). The center of this activity is in Paris at the International Serials Data Bank. The regional center for Southeast Asia is at the National Library of Thailand



in Bangkok. The Indonesian correspondent is the National Scientific Documentation Center (PDIN) in Jakarta. The grant has supported workshops and seminars for librarians.

(2) Cooperation among national libraries SEA (77-0112) for the Consortium of National Libraries and Documentation Centers of Southeast Asia (NLDC-SEA), the regional center of which is at the National Library in Singapore. PDIN in Jakarta is the Indonesian correspondent of this activity. Workshop and seminar support is also provided.

(3) Agricultural Information Bank for Asia - AIBA (Phase III 78-0122). Participants in Southeast Asia are SEAMEO member countries. This is the regional arm of the FAO/AGRIS program. The headquarters are at SEARCA in Los Banos, Philippines, and the Indonesian counterpart is the Bibliotheca Bogoriensis (the Central Library for Biology and Agriculture) in Bogor. Funds to establish this national center were provided under Phase II of the IDRC grant. Two staff members of the Indonesian center were seconded to AIBA for on the job training in the Philippines for 6 months. An offer was made by IDRC to bring Indonesian staff connected with this program to Ottawa for training on the use of computer soft-ware developed there, but this offer was not acted upon by the Indonesian Ministry for Science and Technology whose original request to the Center was for soft-ware only.

Indonesia has four information networks all coordinated by PDIN:

- (1) Science and Technology, based at PDIN.
- (2) Agriculture and Biology, based in Bogor.
- (3) Social Sciences, based at PDIN.

(4) Medical Science, based at the University of Indonesia. One should add in this connection that the Ministry of Education BP3K is in effect also operating an information network for education. The problems of information science in Indonesia were described to me by two dedicated, competent and knowledgeable specialists in this field who are also the directors of the main institutions concerned, Miss Luwarsih Pringgoadisurjo of the PDIN and Dr. Prabowo Tjitropranoto of the Bibliotheca Bogoriensis. I was particularly impressed by their knowledge and awareness of research activity, researchers and researching institutions in virtually all fields in Indonesia and strongly recommend that IDRC program staff of all Divisions take advantage of this source of information for program development in their country.

Both feel considerable frustration as information science professionals that so little use is made of the service provided by their centers. This is attributed to the fact that a scholarly tradition is still not developed in Indonesia. There is little interest in and practice of documentary research. Granted that the holdings, facilities and personnel of their respective centers are still inadequate, even what is available is under-utilized by local scholars. TECHNINET microfiches, for example, are not much used. The centers are seen as libraries only i.e. a place where books accumulate dust. Librarians are seen as the custodians and dusters of the books. Their profession therefore is looked upon as anything but prestigious and glamorous. The recruitment of good staff is a problem. Library training is given in the Faculty of Letters of the University of Indonesia but it does not attract bright people. It has few teaching staff and its output is slow and mediocre.

As centers of information networks, they see their role as not repositories of information only but more importantly as communicators to assure the flow of information from the scientists who generate it to the extension people who interpret it, to the final consumers whose livelihood depends upon it: farmers, artisans, etc. Their role then is to fill the gap between research and the consumers of research. Their potential clientele or users are at these three levels: (1) the basic or "pure" scientists, (2) the applied scientists or extension people, and (3) the consumers at the lowest level of application. This is seen as an ideal yet to be achieved; very little of the information stored reaches all levels of potential users in forms that are meaningful and useful.

The qualifications needed for the staff of the centers depend on the type of information to be processed and the level of sophistication of users. If users are trained scientists, the staff they relate to should have similar qualifications. As both centers are members of international information networks, the staff should have the sophistication to be able to relate to the international community of scientists. Both centers are the hubs of internal in-country information networks and as such are dependent upon their suppliers of information, the local centers and their librarians and information officers. As their qualifications are generally very low, the effectiveness of the networks to serve the needs of their users is also limited.

The training needs of the staff of the national and local centers follow from what has been said. Those involved in simple library operations within an established simple system of classification do not require elaborate training. Short courses and on the job training are usually sufficient. The more elaborate tasks of a functional information network such as the abstracting of documents, the preparation of specialized bibliographies and cross-references, the inputting of data into information banks and their retrieval require much more sophisticated backgrounds and training at the university level. Training of the quality required is not available in Indonesia. The Philippines (UP Diliman) and Thailand are seen as having good training potential in Asia. India is rejected because of their questionable theoretical approach. Most favoured Western countries are the US and the UK. Staff training in different traditions is seen as having advantages.

Miss Luwarsih discussed the staff and training needs of the PDIN. I do not know what her own training background is but she is a very sophisticated person. (Arthur Vespry tells me she had some training in the USSR and is fluent in Russian!). Her professional staff consists of 6 professional librarians. Five of these were trained in the West (US, UK, Canada) and 2 in the Philippines. None have Ph.D.'s but that would be needed. Besides their documentation functions at the PDIN, these staff also have a training role. They teach at the University of Indonesia Library School and provide refresher courses for librarians. The PDIN also serves as a referral center for persons seeking on-the-job training in the region.

Miss Luwarsih states that her staff trained abroad had few problems there because they were selected very carefully. As she gives weight to the potential contribution of the training to the institution, job satisfaction and good performance are important criteria selection. English language proficiency is important but previous academic background, not so much. She would not select a person with a very strict view of religion to avoid possible conflicts. Finally, the selection of the institution of training is also seen as important. She would select a school where adequate supervision is provided by the faculty.

Her preference of an IDRC award program is that in which her institution would nominate candidates to the IDRC. This is then followed up by IDRC staff who interview the candidates and choose the most acceptable in consultation with the recipient institution. The program should be announced and the announcements communicated to interested institutions.

Miss Luwarsih affirmed that the best way IDRC could help improve the performance of her center would be not to send her staff to Ottawa for training but to send an IDRC information science program specialist to PDIN on a one year multiple assignment. He would be asked to actually run the operation during that year and perfect it. Other assignments would include teaching courses at the Library School (not just short courses) and giving specialized lectures, as well as setting up and providing guidance for research projects. He would also bring with him any specialized equipment needed. The choice of the expatriate program specialist to whom this assignment is given should be made most carefully. A previous attempt to do this under British Council auspices failed because of an unfortunate choice of the person to fulfill this function.

Specific information on the Bibliotheca Bogoriensis/Agriculture and Biology Information Network and their training situation was provided by Dr. Prabowo Tjitropramoto. As mentioned earlier, this Central Library is part of the Agency for Agricultural Research and Development complex. Prabowo is also heavily involved in the related Agency for Agricultural Education, Training and Extension (AETE) for the selection of candidates for GOI training awards. He is also active with the Indonesian Librarian Association. Prabowo's earlier academic background was agronomy in which he earned an M.Sc. at UPLB. At that time he was a staff member of CRIA. He later went to the US to do a Ph.D. in Extension Education and Communications at the University of Mississippi. His main interest in the Information Network remains extension.

His present technical staff at the library includes 15 university graduates in agriculture, biology and library science at the Engineer and Doctorandus level, 6 undergraduates and 30 high school graduates. Most have less than 5 years of experience. Three are studying for an M.Sc. in agricultural information science at the Bogor Agricultural University. Another five are studying general information science at the University of Indonesia. One will be leaving shortly for training at the UP Institute of Library Science. Few are studying abroad because of financial limitations. The AARD are now sponsoring 300 of their staff for higher studies but none are in information science.

Prabowo is now trying to find opportunities to up-grade the quality of his staff, screening the better ones for more advanced training. He is seeking support through the AIBA network. The on-the-job training provided to two of his staff in the Philippines (SEARCA) is not enough. What is needed is not only skills but background knowledge. His criteria of selection are (1) dedication to the job, (2) personal qualifications in relation to university requirements re language and transcript, and (3) age: he prefers younger candidates for degree work. Older candidates would be sent for short-term training only and even that is sometimes a problem. Of the two sent for on-the-job training at SEARCA, one (young) did well and the other (old) did not.

The main problems of Indonesian students overseas are language and emotional problems especially in the case of longer term Ph.D. programs. Language should not be a problem with adequate preparation. There are many good English courses given in Indonesia. Candidates should take a one year course stressing technical English before they go abroad. They should also be better briefed on what to expect abroad.

There are currently plans for the computerization of data retrieval in the various information networks. Prabowo thinks manpower development would be a better investment.

Turning now to Health Sciences Division concerns, its support for training activity was related to the following projects:

Traditional healers (76-0079), University of North Sumatra, Medan  
Community health (76-0183), University of North Sumatra, Medan  
Community health (76-0188), University of Andalas, Padang  
Collaborative fertility research (80-0024), University of North Sumatra, Medan

All of the training provided was of short duration from a few days to two months. All of it related to research methodology and/or data handling (demographic biostatistics). Most of the training was received in-country at Gadjah Mada University (Population Studies Center) or at the University of Indonesia (Lembaga Demografi).

In the case of the Fertility Research Project, the Department of Obstetrics and Gynaecology of the University of North Sumatra has collaborated with the Universities of Malaya and Singapore on side-effects of contraceptives with IDRC sponsorship. During that time the principal investigators met every 4-6 months to discuss results and protocols. Some physicians were sent to Singapore for sterilization training. In September 1979 and March 1980, two of the Indonesian physicians were sent to Singapore for basic biostatistics training. They will also participate in two computer processing courses, also

given in Singapore, over the next two years. They will teach the basic biostatistics course to doctors in their Faculty with help from Dr. Lum of the University of Singapore.

The only one of these trainees I had personal contact with was Dr. Syarif Husin Lubis of the Department of Public Health of the University of North Sumatra who participated in the Singapore biostatistics training course related to the Collaborative Fertility Research Project. He received his MD degree from the University of North Sumatra in 1972 and earned an MPH during a year of study at John Hopkins in 1974-1975. He joined the staff of his university on graduation and has been teaching ever since. Other experience acquired during this period are 3 years of research, 1 year of administration and 7 years of extension. He has also had a private medical practice during this period. The training was given at the Kandang Kerbau Maternity Hospital in Singapore. The choice of Singapore as a site for the training was logical as the trainees were participants of the collaborative project involving the Universities of Malaya, Singapore and North Sumatra. Otherwise, the course could just as well have been given in Indonesia, at Gadjah Mada for example.

Although Dr. Lubis sees merit in having such a course in the context of the research project, he was not enthusiastic about the way the course was handled. I gather that the organisational aspects were not handled by IDRC but by the coordinators of the network. They made the selection of the training institution and the content of the program in the interest of the research project. Lubis was drafted, not consulted. No provisions were made for food and lodging in Singapore. Participants were given a flat per diem of S\$49 a day which is clearly inadequate. Any supplies needed had to be purchased by the participants. The first of the two 4-week courses was given by a Dr. Donner of the University of Toronto and was excellent. The second however was a waste of time and money according to Lubis: the first course covered intermediate statistics, the second basic statistics. None of the lectures were optional. Lubis would have wanted some treatment on the subject of project design and management. As for IDRC follow-up that would increase his effectiveness in his job, he suggests more advanced training in biostatistics at the University of Toronto.

On more general issues, Lubis favours the In-project award format as the training is directly related to the application. For Indonesians generally, theoretical course work overseas in a developing country and field work in home country is a better option - in a Third World country for Third World students as all are at the same level language-wise and it is easier to adapt. Lubis himself would have no problems studying in an industrial country as he already has had this experience and his English is excellent. IDRC training awards should be given in consultation with persons who are familiar with promising candidates. Lubis feels that there is a shortage of persons trained in biostatistics both in his institution and in the nation. His suggestion to IDRC to increase the research capability within the Third World is to provide short courses in research methodology.

More general issues concerning the medical profession in Indonesia and the Faculty of Medicine at the University of North Sumatra (USU) in particular were discussed by Dr. Lubis' colleagues.

Dr. Bachtiar Ginting, M.D., MPH, Department of Public Health and former Dean of the Faculty.

There are twenty-two Medical Schools in Indonesia currently, fourteen of which are State Schools and the remaining eight, private. Of the latter, four are in Jakarta, two in Medan, and one in Semarang. Most are connected with some religious group. The strongest medical schools are those of the University of Airlangga in Surabaya and the University of Indonesia in Jakarta. The Airlangga school is said to be well connected with the Department of Health of the Ministry and to have developed excellent health care delivery systems. Tuition fees in state schools are nominal whereas in private schools they tend to be high. At USU, approximately 900 students apply for admission to the Medical school each year but only 120 are accepted.

There is an increasing demand for medical training in Indonesia. Current government development plans call for the establishment of hospitals in all Regencies (sub-Provinces) of the Republic by the end of Repelita III (1982). They are to have specialists in four fields on their staff: internal medicine, surgery, obstetrics and paediatrics.

There is a standard core curriculum for all medical schools in Indonesia which is established by a joint committee composed of representatives of the Ministry of Education, the Ministry of Health, and the Consortium of Medical Schools. Beyond this core, individual medical schools are free to teach which ever subjects they want. Introductory sociology and anthropology are part of the core. Official policy now dictates that a stronger orientation be given towards community medicine but this policy is implemented according to the perception of each. Some schools give training in community medicine from the first year onwards. Others such as that of USU provide this training only starting with the 5th year.

The Medical Consortium is of the view that the training provided by the medical schools in Indonesia has to be rethought in terms of the needs of the people and of a more functional restructuring of medical services. For example, there is too great a gap in medical knowledge and expertise between nurses and doctors. To fill this gap Dr. Ginting would propose a 3 year diploma course to train middle level health workers and technicians. More basically, he feels that research needs to be conducted on health services and the needs they should be serving in order to develop a more functional system of medical education. Its output needs to be improved both quantitatively and qualitatively.

Dr. Ginting is a strong believer in the usefulness of social research in relation to the practice of medicine. Health workers should be trained in research methodology. All junior staff members of the medical school were recently given a 1-month course at USU in basic statistics and the philosophy of research. They would need more. If IDRC wanted to help, rather than send these off for training courses elsewhere, it would be much more productive to provide training to one resource person who could then train others at USU.

On research priorities, Ginting pointed out that much research is being done in areas related to fertility because there is a need for it and it is the object of national policy. Also, many funding agencies are willing to support it. Another area on which research is needed is health delivery systems: the composition of the health teams and the types of expertise needed. Needed research goes undone because of the lack of research potential, not because of shortage of research funds. Available funds cannot be used because of this.

On further training beyond the MD, several faculty members aspire to it, not always in a disinterested way, especially in the case of those opting for clinical specialisations. They can earn much more money than GP's. Some study in Indonesia. Others go abroad e.g. to study new methods of surgery in degree programs. Five of the Faculty MD's now have Ph.D.'s. Three more will return next year with Ph.D.'s in pharmacology, nutrition and bio-chemistry earned in the Netherlands, Germany and in the UK.

The medical school has a staff development program using training funds provided by USAID, Ford Foundation, Australia, the Netherlands and Denmark (DANIDA). An application has been made to the ADB for a fellowship to study medical anthropology. All candidates are pre-selected and screened by a USU selection committee. Language is the main problem for those studying abroad. A doctor studying clinical medicine in the US has to take the examination (in English) for the ECSMD certificate to be allowed direct contact with patients in US medical schools. Otherwise he can only observe. In medicine as in other fields, there is very little brain drain. Most overseas medical students return to Indonesia after completing their studies.

To illustrate the thinking of staff in the Department of Obstetrics and Gynaecology, the following is a shopping list of projects proposed to IDRC by the Head of the Department, Dr. Erjan Albar and his colleagues:

1. Upgrading of indigenous traditional midwives.
2. Study of mortality cases of mother and child to determine their causes.
3. Short-term training in the technique of recanalization at John Hopkins University.
4. Short-term training for family planning counselors.
5. Training in social medicine: Philippines or Thailand.
6. Cardiotocograph for foetal monitoring.

The points raised by the staff of the USU medical school are taken up in more concrete and specific form in the two following reports of interviews with the chief officers of two action oriented organisations.

Dr. Firman Lubis, M.D., Executive Director, Yayasan Kusuma Buana (Foundation of the Flowers of the World) YKB. The charter of this Jakarta based Foundation states that it was founded to assist the Indonesian Government and community in general to solve problems of community welfare and related areas including health, population, family planning, and nutrition. Technical assistance and support are being provided by inter-national organisations such as the Ford Foundation, USAID, UNFPA, PIACT, etc. Although the YKB is a private organisation, it is said to have considerable influence in Government through its Executive Director, Dr. Firman Lubis who has a strong base in the National Family Planning Coordinating Board (BKKBN).

Dr. Lubis addressed the issue of the training provided by medical schools in Indonesia and its relationship to the health needs of the country. Insofar as they deal with scientific medical areas, the training they provide is generally good but it is not relevant in relation to the needs which are for community health. They concentrate on fields of specialization such as heart disease, brain problems, cancer, etc which are important but not the main killers in this country. The practitioners they train all end up in health centers which people use very little. What is needed perhaps is a different kind of medical practitioners with a different training which prepares him to work in rural areas using limited supplies and facilities - the barefoot doctor approach.

The root causes of health problems and mortality in Indonesia are not medical but socio-economic in nature. To illustrate, high fertility and population growth rates generate poverty which leads to poor environmental sanitation and malnutrition. These conditions produce the infectious diseases which are the big killers (relatively), not heart conditions or brain tumors.

There is a great need therefore to study the socio-economic conditions leading to these results in order to develop appropriate health services, the type of medical manpower needed to cope with these conditions and the best way to deploy it. Some medical people study these problems but they do not have the social science skills to deal with them. This should be done more appropriately by medical anthropologists.

Not much is being done in this field. An important reason is weakness in research capability: the ability to identify what research is needed in relation to national health problems and to develop an adequate research design. There is also little interest in developing such a research capability. Secondly, there is little interest in conducting such research as there are no government allocations for it and it is not a good source of income. Government allocations for research in the medical field go to basic, not applied research.



In Dr. Lubis' view, the best contribution that IDRC could make to address these problems would be to support the development of alternative types of medical practitioner training through workshops and seminars to generate ideas, and to support formal training to implement the conclusions of these studies.

Dr. Lukas Hendrata, M.D., Program Director, Yayasan Indonesia Sejahtera - YIS (Foundation for Comprehensive Well-being). This also is a Jakarta based private foundation. Its Director, Dr. Hendrata is not a civil servant but he is closely involved with government and has a wide range of contacts. He addressed the same issues as Dr. Lubis but carried them further into the field of application.

The purpose of this Foundation is to strengthen national development programs in the broad field of health by developing strategies to implement them. Its main interest and involvement is in project implementation. It is in fact a community development organisation concentrating on the areas of family planning, primary health care and nutrition. Hendrata finds that government programs in these areas are weak because they do not take the socio-cultural dimension of the target communities into consideration. Much research has been done on fertility, nutrition, etc but he feels it has missed the point. It concentrates on concepts and programs as a starting point. It should/the other way around looking /be first at the characteristics of the population to be affected and tailoring programs accordingly - programs that are compatible with and can take advantage of these characteristics.

His approach then is to develop such programs adding the community perspective and making full use of community dynamics. For example, he strives to make use of existing network of community organisations for the promotion and implementation of specific programs. Family planning clubs are organised in this context. One must also allow for limitations and constraints in project development and make full use of resources at hand. The approach then is both grassroots and government bureaucracy based. All available government workers are called upon to participate. He relies on four basic strategies for project implementation: training, research, communication and field development.

Research is seen as a basic component, not done for its own sake but as a source of information for project implementation. The Foundation has an in-house research capacity composed of four researchers trained to the doctorandus level who also give training to other project participants. There is no need for higher levels of training as all that is required is sensitivity to know which questions to ask and an understanding of a field situation. What would be useful however is more specialised training in action research. Hendrata's request to IDRC is to identify places where such training is given and to sponsor his staff to attend short-term (2-3 month) courses there. On their return they would train others in the same techniques. Sponsorship to attend workshops abroad on the same subject would also be useful.

Hendratta mentioned that the Institute of Economic and Social Research, Education and Information (LP3ES) also engages in activities similar to that of his Foundation.

### PART III: EVALUATION OF TRAINING SUPPORT, CONCLUSIONS AND RECOMMENDATIONS

Centre support for training in Indonesia is summarised according to type as follows:

#### 1. Non-degree training

1.1 Short-term training from a few days to a few weeks related to IDRC funded research project implementation: pre/in-project awards. This was provided to approximately 10 participants of SS and HS Division projects in Sumatra.

1.2 Medium term formal training (6 months) related to two AFNS Division projects (Cassava; Cropping Systems). Some, but not all, were in-project awards.

- (a) One from Brawijaya University, Malang, was sent to CIAT in Columbia for training in cassava.
- (b) Others, one from the South Sulawesi Provincial Agricultural Office, and the others from CRIA in Bogor were sent to IRRI in the Philippines for training in cropping systems.

1.3 On the job training in the context of Centre IS Division support for regional information networks in Southeast Asia. Two trainees of the Indonesian agricultural information network center in Bogor were sent to the Philippines (SEARCA) to gain on the job experience for six months.

#### 1.4 Training through supervised research for junior scholars.

- (a) SEAPRAP. It involves non-formal training but informal guidance by more experienced advisers for the conduct of the research is provided. Approximately 20 junior scholars from several Indonesian provinces have participated in the program. The exercise is normally of one year duration.
- (b) Social Research Training Project (Jakarta Station)  
This program involves some formal training and full-time supervision in the execution of a research project over a one year period. Twelve junior faculty members a year from all parts of Indonesia were assisted in taking this course over the last 4 years for a total of 48 trainees.

- (c) Research Methodology and Training Program, Population Studies Center, Gadjah Mada University. This program provides formal social research training in the form of a series of one to two week workshops on research methodology and design, data analysis, and research reporting related to research projects undertaken by participants over a six month to one year period. Centre support for this program began in early 1980. There were eight participants from all parts of Indonesia in 1979/1980.

## 2. Degree training

2.1 In-project training. Two IDRC supported research projects have had a formal degree in-project training component.

- (a) Brawijaya University, Malang. Participants of the Cassava Project (AFNS) who are also staff members of the University are supported by project funds to pursue a traditional second cycle doctorate in their own university. Given the nature of this degree, support is mainly for thesis research. At least five are receiving this support.
- (b) Agro-Economic Survey, Bogor, Rural Dynamics Study, West Java (SS). This Centre funded research project has a formal training component for participating staff which however is not funded by IDRC except for two through the ADC/RRTP route and the possible use of project research data for thesis writing. Degree training is either in the Magister Program of the Bogor Agricultural University or abroad. The program thus far has yielded two Ph.D's and nineteen MSc's, all in the rural social sciences.

## 2.2 Post-project training

- (a) IDRC/HR. A graduate of the SS Division Social Research Training Project who is a staff member of IKIP Sanata Dharma, Yogyakarta, is completing an MSc in agricultural economics at UPLB, Philippines, on a post-project award.
- (b) IDRC/AFNS (?). Three participants of the AFNS Division Fish Parasites Project were given post-project awards to pursue MSc level training in fisheries managements, two in Canada and one in the US.

## 2.3 Non-project related training

ADC/RRTP fellowship program, funded by IDRC. Eighteen Indonesians have been fellowship recipients since 1971, 6 for Ph.D. programs and 12 for Msc's. All were for training in the rural social sciences, mostly in agricultural economics. Nine were for study in in-country Pasca Sarjana programs and the remainder for training in other Southeast Asian countries.

Other learning opportunities such as study tours, participation in professional conferences and seminars were also provided by the Centre, but these are not included in this review.

The best way to evaluate Centre contribution to training in Indonesia would have been to examine and compare the job effectiveness of the trainees in the performance of their jobs before and after receiving the training. This has proved to be difficult or impossible in most cases because of time constraints and inability to establish contacts either with the trainees or with their supervisors who could best report on this. Moreover, for most trainees interviewed, the training program was still in progress so that any improvement in their research ability is still to be demonstrated. However subjective, some conclusions are possible which are sufficiently founded in fact to serve as a basis for reflexion on Centre policy and practice relating to support for training. We begin by reviewing the various types of training supported to evaluate their merit first in themselves, then in the broader context of the Indonesian situation.

Short-term training related to IDRC funded research project implementation is clearly useful in principle insofar as it enhances the training spin-off expected of any Centre project and contributes to the quality of the research project itself. Whether it did, does or will can best be appreciated by the IDRC program officers involved. All of the training provided was in the field of social science, most of it acquired at the Population Studies Center of Gadjah Mada. Given the good track record of this institution one can assume that the training was relevant and of high quality. More details are known of the training program provided in Singapore. It appears to have had administrative shortcomings affecting both the planning of the course content and the provision of adequate subsistence support. The fault seems to lie not with IDRC staff but with the coordinators of the exercise. While it is normal and desirable to have the institutional grant recipients assume the main responsibility for the selection of the trainees and the organisation of such exercises, it seems that there is room for IDRC staff preventive intervention to anticipate and avoid these problems.

Given the brevity of this type of training, any substantive increase in learning would be minimal. I would find justification for it only if two conditions are met. The first is that the training relate directly and functionally to the performance of the research project, to enhance its quality on the one hand, and the other, to derive from it opportunities to apply the skills acquired so that the learning process continues. The second condition relates to the previous academic background and experience of the trainees. If they do not already have some knowledge of the research process, it is wishful thinking to expect that they can be transformed into researchers in a few days.

Medium term non degree formal training. Under review here are the two six month training courses given at CIAT and at IRRI.

One would think that this program should have been very attractive and an unqualified success. All participants were Indonesian Government R & D organisation staff directly dealing in the subject matter of the courses in their jobs. The courses were therefore relevant and provided an opportunity to improve their job performance. Secondly, all participants agreed that the quality of the courses was excellent. Finally, the program provided an opportunity for the participants to broaden their horizons and acquire international experience.

Although clearly all participants received some benefits from the program, it cannot be called an unqualified success. The better students were dissatisfied because it was not a degree program and they did not get all the learning they aspired too. The professional interests of the participants were too diverse: the proportion of those claiming the courses were not useful to them because of this was much too high. The proportion of participants lacking the linguistic skills to benefit from the courses was also too high. Although the management of the logistics of the program (travel arrangements, official clearances, etc) appears to have been generally good, many experienced financial problems because allowances did not take into consideration loss of income while on study leave from their jobs.

It would appear that many of these problems could have been avoided if better selection and better briefing had been applied, which was all the more important given the very specialised nature of the training program. There was no flexibility for tailoring the courses to the individual needs and interests of the participants. It was rather important then to identify and select candidates whose needs and interests fitted in with what was being provided. In all cases apparently the candidates were nominated by their institutional superiors. The choice of candidates shows that approval by such superiors carries no guarantee of suitability for the training course. Criteria of selection, apparently related more to extraneous considerations such as seniority, favouritism, the desire to provide opportunities to all staff, etc. There is no mention by anyone of any further screening. Some trainees mentioned that former IRRI program participants had provided some information on them. Some perhaps joined the program knowing it would not suit them but went along just for the ride, a hopefully pleasant break from job routine.

Even with better selection procedures, there probably would still have been dissatisfaction. This is a difficult clientele and it is impossible to satisfy everyone. Some objections were quite unfair e.g. the fact that it was not a degree program. No one was forced to join the program. The training that was offered was of high quality even if incomplete from their point of view. Some did and others can use it as part of a higher degree program.

Some reflexions on options come to mind from the consideration of this experience:

Is it possible, as one informant suggested, that the funds spent on this program would have been better invested if used for degree training in Indonesia? An important advantage would be the possibility of tailoring the training program to the specific professional interests of the students rather than forcing them into a straight-jacket training situation leaving no room for alternatives. The disadvantage would be that training opportunities in Indonesia still do not match the standards of CIAT or IRRI in quality.

Secondly, is there not the possibility that the participants of the present program were either overqualified or underqualified? The training program was extremely narrow and specialised. At one end of the scale one can conceive it as a field of specialisation for fully trained generalists. At the other end, the training could be down graded to a diploma program for technicians committed exclusively to that field of activity.

I feel there is room for all of these variations but in order to reach a decision on what is appropriate, IDRC staff or anyone else involved in making the decision would need much more first hand knowledge of potential candidates and their situation than apparently was available to the organisers of this program.

On the job training. There is very little to say on the only instance of this type of training under review - the two staff members of the Bogor Central Library for Biology and Agriculture sent to SEARCA in the Philippines for on the job training. The view of their supervisor is that one of the two who is younger and has an Ir. degree did fairly well whereas his companion who has no degree and is older did poorly. Neither had sufficient background to really profit by this experience and the usefulness of the training to his institution is minimal. The conclusions are obvious. On the job training at least for information science is not an adequate vehicle to acquire basic needed knowledge. Presumably it would be useful to more highly trained practitioners capable of comprehending more developed information systems and applying them in their home institutions.

Training through supervised research. Three programs come under review in this category: SEAPRAP, the Jakarta Urban Social Research Training Station program, and the Gadjah Mada Research Methodology and Training Program. All three basically follow the on the job training learning by doing approach but the learning experience provided by doing research is complemented by a measure of instruction and supervisions that is lowest in the SEAPRAP approach and highest in the Jakarta Station model. Comments are limited to these two models as the Gadjah Mada program simply improves upon the SEAPRAP model without modifying it substantially.

It is probably fair to say that of themselves neither of these programs have the training power to generate a competent independent research capacity. Candidates selected for the training generally have a very weak background in social science. Any formal instruction received during the training cannot go beyond raising this knowledge to a very basic level. They have a better understanding of what research is all about. They presumably can function well as research assistants working with senior scholars and can initiate very simple survey type research of limited usefulness. As the level of professionalism is very low, the contribution of the programs to research institution building on the basis of this training and these trainees alone is virtually nil.

In the case of SEAPRAP, one must distinguish between two categories of grantees, those who are involved in higher degree programs and those who are not. Although the SEAPRAP Committee has always when possible favoured "under privileged" applicants who have not had the benefit of higher training abroad in its selection process, each selection round has always included awards to MA and Ph.D. candidates seeking funds to support their thesis research. For these grantees, the SEAPRAP program is a complementary, useful, but not the main vehicles for social research training. These indeed do acquire a capacity for professional level independent research but not generated by the SEAPRAP program of and by itself.

Both SEAPRAP and the Jakarta programs have been given favourable evaluations and I agree that both are good programs but not, once again of themselves, as adequate training vehicles. Their value lies in the fact that they have contributed to the creation of a social research culture by increasing awareness of research and its potential, by increasing the number of persons who can assist in the performance of research, and, most importantly by identifying a pool of promising social science students. The rationale of research project related training awards is that performance on the project provides a good basis for identifying good student potential. The value of the projects under review is that they cast a much wider net but the benefit is lost if there is no follow-up action to activate the potential thus identified. I have little information on the number of SEAPRAP alumni who have gone on to formal training for higher degrees but there have been some. In the case of the Social Research Training Program, the Yayasan has been systematic in selecting the best graduates for higher studies and soliciting scholarships from donors to support them. A Centre Post Project award provided to one of these illustrates how successful the process can be (cf infra). At the same time, the Yayasan has recognised the inadequacies of the present program and is shifting to a more formal approach to training.

I feel that the SEAPRAP approach has been good. As an institutionalised program it is being phased out. Its defects are being corrected by the Gadjah Mada program which merits continued support. Although the Social Research Training Program is not without merit it is not cost effective. The program has been very expensive and would not have survived without

strong Indonesian financial support. Its effectiveness as a training system has not been commensurate with the cost which is about the same as an overseas scholarship program. I feel that the Yayasan is moving in the right direction in concentrating on Master's level training development. The new program will not be less expensive but will probably be more effective to provide quality training.

Formal degree in-project training. Both projects under review - the Malang Brawijaya University Cassava Project related training program and the Bogor Agro-Economic Survey Rural Dynamics Study related training program - are highly interesting. Both derive full benefit from the research project connection to identify promising students. Training programs are given purpose and direction by the specificity provided by the project. Both projects contribute directly and substantially to institution building and both deal in areas of vital development concerns. The administration of both projects has been faultless because of the quality of local leadership. One can argue about the relative merit of the thrust of either project. The emphasis of the Bogor project is to enhance the capacity of a research unit the benefits of which accrue to the national rural development effort. The emphasis of the Malang project is to enhance the capacity of a training unit and one could argue that the multiplier effect is greater.

If one consider the quality of the training provided, the Bogor project is clearly the winner. Besides the benefits of the research experience, all trainees received a formal instructional course in better institutions of higher learning - the Bogor Agricultural University in most instances. It is one of the most advanced in Indonesia with its already functional Pasca Sarjana Magister Program. The training at Brawijaya still follows the old two cycle system so that the doctorate program being pursued is based almost exclusively on research with a minimum of course work. Although the training is at the doctorate level, it is in fact probably inferior to the Bogor Master's program. The Brawijaya program does not address the problem of in-breeding and does not lead to innovativeness. All program participants interviewed struck me as very bright and dedicated. All aspire to higher levels of training overseas for professional reasons. I think that the quality of the program would have been greatly enhanced if the best of these could have been supported for advanced training elsewhere.

Notwithstanding the imperfections noted, both models are very successful and useful.

Formal degree post-project training. Of the two projects noted, I have information only on the HR administered post-project award program of Social Research Training project alumnus Petrus Soedarno who is about to complete his MSc program in agricultural economics at UPLB in the Philippines.



This award is an example of the operation of the pre-selection process of project related training support at its best. The grantee was a known quantity. He was nominated by his supervisors who knew him well as having a good mind and a scholarly disposition, as being strongly motivated, resourceful and committed. His performance lived up to expectations and he did well in his studies. He had no personal problems of coping with studies in the Philippines.

The program has shortcomings. There were embarrassing delays in the processing of the grant due mainly to the vagueness of policy on post-project awards in the SS Division. Not enough information was provided on training institutions to select from. To compensate, the administration of the grant by the HR team was efficient and caring.

However fortuitous, the choice of UPLB as a training institution proved to be a good one. Courses were good but supervision was weak. Soedarno's experience indicates that students sent to this institution for training need to be resourceful and have initiative.

Soedarno was well supported in his training program by all concerned: his home institution, his supervisors in the Social Research Training Project, the Yayasan and IDRC staff. The outcome is a well trained social scientist who has the capacity to play a significant role both in research and training in Indonesia. His performance to date indicates that he is Ph.D. material.

One should perhaps note that this post-project award is atypical in the sense that it does not tie in with a standard IDRC funded research project but with a training exercise built around the performance of as many discrete research projects as there are trainees. The disadvantage perhaps is that there is less probability that the post-project training will be geared to the activity of the trainee's home institution as in the case of trainees selected from the research staff of an institution performing a standard research project. It consequently offers less potential for institution building and support.

Formal degree non-project related training. This last category includes all training awards made by the Centre through the ADC Regional Research and Training Program. None of the awards are per se related to an IDRC funded research project although in fact 3 of the 18 grantees have indeed participated in such projects. Even though the element of the pre-selection process acting on research project performance is lacking, the screening of candidates for ADC fellowships is thorough and professional. As a condition of eligibility for consideration, all potential candidates must have a strong academic background supported by a transcript showing an average grade of not less than A minus. They must have had a work experience in research or teaching of not less than two years and have a guaranteed position in an Indonesian institution on completion of the training. ADC Associates in Indonesia (Bill Collier,

Ben White, Jeff Swanson) who are very familiar with local conditions play a key role in the selection process. They interview the candidates personally and check out their performance in their work. Their report goes into the candidates' dossier. As a check against their biases (e.g. they might tend to favour their own research assistants), objective referees (preferably non-Indonesian) are also asked to evaluate the candidates. In some cases, their negative evaluations have prevailed against the positive recommendation of the Associates. The last step is for the dossier of all applicants to be reviewed by a committee of ADC/RRTP staff and Southeast Asian scholars who then make the selection of fellowship awardees on this basis. After the selection has been made, the grant is administered by the program fellowship officer who is a professional social scientist and a specialist in Southeast Asia. He keeps in touch with the grantees during their training offering advice and assistance as needed. In closer contact still and on a more regular basis, the resident ADC Associates also provide professional guidance. The quality and usefulness of the ADC inputs were confirmed by the two program grantees providing information on their awards.

The fellowship program has had a very good record since its inception. The rate of attrition of grantees has been very low and all fellows have returned to their home institution on graduation. The program demonstrates that the in-project approach to training grantee selection has alternatives that also have merit. It also provides a qualification to the view that scholarship programs are an "endless sink" (David Hopper). They can be of course, but if selection criteria are high enough, the number of prospective candidates who can meet them is greatly reduced. Given the present selection procedure followed by the ADC program, it is doubtful that many more study awards could be granted than are in fact provided due to the limited number of qualified candidates available in Indonesia.

Because it is limited to the rural social sciences, the ADC program serves only one IDRC program area. I do not know of any other programs who could service the other areas as well. Because of financial constraints, the ADC/RRTP limits its support currently to Master's level training in Southeast Asian institutions. Because of this limitation the program has not been able to accommodate the aspirations of the two grantees contacted: one to study abroad, the other to be supported at the Ph.D. level. In the case of the Gadjah Mada student the motive for wanting to study abroad (in Australia) was dissatisfaction with the Gadjah Mada program. This reveals a broader problem for this as well as other training programs directing grantees to universities in the region. The demand for training is growing more rapidly than the training capacity of these institutions. The more they function beyond their capacity, the more the quality of the training suffers. The only way of easing the problem, at least in the short term, is to send more trainees to appropriate institutions elsewhere.

A noteworthy feature of much of the Centre funded training activity in Indonesia is that most programs are self-administered. Center staff are heavily involved in project identification and design and in dealing with executing agencies to assure that all the components needed for the implementation of the training program are in fact in place and that ground rules are understood and agreed upon. Once approved, projects are monitored by Centre staff and presumably professional advice provided on these occasions, but there is little staff involvement in the actual running of the training program once the structure is set-up. The selection of the trainees, the determination of the content of the training, guidance in the course of the training and overall administration are largely left to the implementors of the program. This is true at least for the following more substantial projects which constitute the bulk of the programs supported:

- Training in cropping systems at IRRI
- SEAPRAP (post Pedro Flores era)
- Social Research Training, Indonesia
- Cassava Project related training at Brawijaya
- Rural Dynamics Study related training
- ADC/RRTP fellowship program.

Apparently, the only projects having direct Centre staff involvement with the trainees were the Cassava Project related training at CIAT, the Fish Parasites Project related training in Canada and the US, and the Social Research Training post project award for study at UPLB. The first two were administered by AFNS (?) and the third by HR.

The Centre funded training programs in Indonesia have been reasonably successful. IDRC staff can take credit for the development of the activity and the selection of effective executing organisations. Whatever success was achieved in the training process itself is due much more to the implementors of the project. Perhaps it could not have been otherwise. Good training programs are of necessity labour-intensive and the Centre style of operations does not lend itself well to sustained staff participation in out of station locations. It follows then that if the Centre is to maintain or intensify training support in Indonesia following the same pattern, it will have to continue to rely on existing non-IDRC programs, identify other effective executing agencies, and/or it will have to develop an executing capacity of its own the main component of which is a stronger presence in the field.

The impact of IDRC support for training in Indonesia is not any easier to evaluate than the impact of support for research. Even when there is a real impact it is not always evident at the short term and the impact is not always the one intended. The studies needed to reveal it, while interesting, would probably not be feasible and the full impact will probably be never known. One is left then with conjectures.

The impact of the non degree training is probably very slight at the short term but in the longer term it is potentially quite considerable. I refer mainly to what was mentioned earlier of the catalyst function of supervised research programs to activate latent research potential and launch some young obscure but talented scholars on productive careers.

The impact of degree training is more tangible in that the level of skills acquired is given a measure by the degree earned. The impact of Centre support for degree training is not inconsiderable in terms of numbers of degrees earned or being earned mainly because of support for the ADC/RRTP program. It is relatively lower than that of other comparable funding agencies such as Ford Foundation, Rockefeller and ADC/New York whose main emphasis has been on training. It is clearly much lower than that of the big funders such as USAID which in 1980 alone will be sending more than 300 Indonesian grantees abroad for training. Foundation people however maintain that the quality of these big training programs is much lower than theirs because they do not have the same professional capacity to administer them efficiently. Centre degree training support has had an impact in terms of institution building for two institutions. Others, especially Ford, have done much more. The training has been relevant in the sense that all skills acquired have been needed and are in short supply. All trainees supported remain attached to their home institutions.

It is difficult to avoid the impression that the Centre has had a "bargain basement" approach to training support and that by striving to provide training opportunities to the largest number at the lowest possible price, it has in fact placed more emphasis on quantity than on quality of training. There has been much reliance on the provision of research experience as a form of training but it is inadequate without a rather stronger formal training component than what was provided. In the case of degree students, very few have been sent to first rate institutions to get superior training.

It can be argued of course that the Centre mandate is for research and not for training per se, that any training provided is a spin-off and not a main objective, and that some support is better than no support at all. But one can argue just as well that the impact of Centre support for research itself has not been as high as it could have been because only in relatively few instances has training been provided to improve the quality of the research and to act on its conclusions.

Indonesian training needs. Summarising what was said earlier, Indonesia is relatively affluent in terms of national income because of its new oil wealth but it is faced with huge problems at the local and regional level. The national wealth is not reaching the poor; there is a vast disparity of income. Because of the large size of the population in relation to the relatively small area of land cultivated, Indonesia is a net importer of rice, the staple food. The level of

illiteracy is disordinately high. There are great imbalances in population distribution between Java and the other islands. The transmigration program to correct it is not effective because of weakness in relocation planning. Although the new oil wealth offers some hope of more accelerated development to solve these and other problems, the process is delayed because of the shortage of trained personnel to plan and implement it. Because of this, Indonesia is a "poor" middle income developing country. Manpower development becomes a high priority area to come to grips with the problems of poverty and to develop the vast potential resources of the country.

The main obstacle to the implementation of this policy is the weaknesses of Indonesia's training and research capacity. The number of competent trainers/researchers is small and concentrated mainly in Java in five centers of excellence. Provincial institutions especially in the Outer Islands are deprived. A tradition of scholarship is lacking; there is no identifiable research culture. Qualifications take priority over functional skills. Structural constraints make full time commitment to any given research or training task difficult.

Weaknesses are in evidence across the disciplinary board. There is said to be a surplus of workers in the agricultural sciences at the Sarjana (undergraduate) level but a crying need for them at diploma, Master's and Ph.D. levels. There is an unsatisfied demand for social science inputs in all fields of development. The Indonesian social science elite is not renewing itself: the stars have remained the same for the last 20 years. Available science and technology skills are not geared to the opportunities provided by the new oil income. In medicine, health care delivery systems are inadequate due to the shortage and inappropriate training of health workers; the rural masses are not reached. There is a critical shortage of staff in education. And soon in practically any development field one can mention.

The weaknesses of the Indonesian training and research capacity cannot be corrected by increased funding alone. The need is for professional inputs to formulate, administer and participate in training programs.

Recommendations on training support. What follows in the writer's somewhat interpretive and personally biased summary of views on appropriate training programs for Indonesia expressed mainly by Indonesian scholars during the consultancy for the benefit of IDRC.

(a) On the design of training support programs. General scholarship programs inviting applications on an open competitive basis are too diffuse and too vague to have a strong impact. A better approach is a program that is task specific: a development program, a research project, a teaching activity, etc. Generally programs should be designed in relation to the work context of specific institutions or programs to be assisted to improve the quality of the work and to contribute to institution building. Even if the IDRC proposes the subject area of its

training programs this should be negotiable and counter proposals by responsible local program directors should be considered to assure that real needs are in fact served. There is much merit to the idea of providing training support in the context of a research project but this need not be limited to IDRC supported projects.

(b) On the types of training supported. As a general principle, formal higher level education is more effective than short term or on the job training and should be a main area of support. Short term training is useful when it is geared to the acquisition of specific skills needed for a concrete task such as a research project the trainees are involved in. It is virtually useless for general professional upgrading outside of such a context, especially in the case of persons with professional backgrounds which are too weak to take advantage of it. At most, it can serve as a means to identify and select more promising candidates for further more advanced training.

(c) On the identification and selection of training grantees. Although the purpose of the training is the intellectual development of the candidates supported, in the development context of Indonesia. This needs to be related to the usefulness of the training and the potential contribution the trainees can make to the programs they are associated with on graduation. Several mechanisms are admissible for the identification of candidates for training support. It can be done by IDRC staff or by other professionals not directly connected with institutions supported, who get to know promising subjects, or candidates can be nominated directly by their institutions. It seems desirable and acceptable however that the candidates be evaluated independently by IDRC or its agent who make the final selection based on its own criteria. The evaluation and selection however should be made in consultation with institutional supervisors and their views should be seriously taken into consideration.

Especially in the case of candidates for training abroad, there is a need to evaluate them seriously from the point of view of academic background and intellectual capacity, motivation and work dedication based on actual, emotional stability and adaptability, and English language proficiency.

(d) On the place of training. In principle, Master's level studies should be done in-country followed by more advanced training overseas for better students. In view of the limited capacity of Indonesian training institutions, other institutions in the Asian region may also be considered for Master's level studies, especially in the case of better students. There is no point in sending terminal Master's degree students outside of the region for training.

In the case of doctoral students, the facilities, staff and training programs are more important considerations for the determination of appropriate institutions of training than their location in a developing

or industrial country. Likewise, the best site for the practicum (research or experiment) connected with the preparation of a degree thesis depends more on the subject matter of the training than on any pre-conceived notion that it should be done in-country or abroad. In the case of social science research, it should clearly be done in-country. In the case of scientific disciplines requiring the use of sophisticated equipment, it could very well be preferable to do it abroad.

(e) On trainee care and after-care. Successful candidates need to be assisted in the choice of programs and institutions of study and be briefed on conditions to expect in the place of training. Opportunities should be provided to improve their English language proficiency where need. Grants of supported married students training abroad for periods of longer than one year should include provisions for the wife to accompany her husband. Contact should not be discontinued when grantees return to Indonesia on graduation. Where appropriate, small follow-up grants for research and/or equipment should be provided to assure that skills acquired during the training are utilised.

(f) More general considerations. In the provision of training support, provincial and less attended to institutions should be favoured over elite institutions who are constantly courted by donor agencies. These should be visited, their needs identified, and their growth potential and potential development role in their region evaluated for possible project elaboration.

Whatever further assistance is needed to increase the research potential of any given institution beyond support for training can best be determined in the light of the specific situation of that institution. Needs vary from one to the other and the assistance should complement and not duplicate what is provided by other donors.

Longer term commitment by IDRC to any given training program is seen as desirable and has real advantages. Good working relationships and mutual trust can develop resulting in more problem-free programs and greater impact. Institution building and the development of a strong research potential take time.

There is a need for positive monitoring of and direct involvement in training programs by IDRC staff, not only to protect the Centre investment but to provide professional and administrative assistance. Given conditions prevailing in Indonesia, some programs would be greatly strengthened by longer term involvement by expatriate scholars who are either Centre program staff or consultants provided by the Centre.

### Centre options for training support

There is clearly no way that the Centre can address all training needs of Indonesia or respond to all requests. It can only respond and develop programs in the framework of its own constraints, the most important of which are available funding, number and qualifications of staff, geographical limitations, program areas and organisational structure. But even these constraints can be manipulated by policy decisions. For example, if it is demonstrated that project development in Indonesia has to be more labour intensive for both research and training programs as the facts seem to warrant, more staff with the needed qualifications can be made available by changing budget allocations within the overall budget.

All funding agencies are faced with the same problem of defining a manageable area of operation to make best use of limited resources. Some concentrate on one discipline (ADC), others on one institution (Rockefeller Foundation). Ford Foundation has tended to concentrate on training related activities: program and staff development in training institutions. The IDRC has chosen research support as its field of concentration but it has been less successful than others perhaps in bringing it into focus to produce a measurable impact. Friends of the Centre believe that its action is to diffuse and spread too thin. Those less kindly disposed refer to the IDRC shotgun approach to project development. Although exaggerated, this accusation has some basis in fact. My personal view is that this is due to the disciplinary approach to project development. There would be merit I think in concentrating more on locally and ecologically defined problems following an interdisciplinary approach.

I see the following options open to the IDRC for the implementation of training support in Indonesia. They are not mutually exclusive.

(1) Fund existing programs of other agencies. The Centre has done this for many years with good results. An outstanding example is the ADC/RRTP program. The ADC style of operation is magnificently suited to meet the training needs of Indonesia. I seriously believe that the Centre decision to phase out support for this program should be reconsidered. Unless a viable and equally effective Centre program is developed to achieve the same objectives, the effect of this decision will be to reduce the Centre contribution to training in Indonesia to an almost insignificant level.

(2) Coordinate with others in complementary relationships. Without specifying the nature of the training programs to be developed, the following is a list of organisations that could be involved in an IDRC sponsored joint effort and the nature of their contribution:

CIDA : source of funding and technical assistance.

ADC : presence in the field, training expertise, experience in fellowship administration.



Ford Foundation : expert, methodical knowledge of the country, good contacts, experience in training program and institution development.

Rockefeller Foundation

MUCIA (Midwest Universities Consortium for International Activities)

AAUCS (Asian Australian Universities Cooperation Scheme)  
These three organisations are good at curriculum development but weak on research. The last two are university consortia.

IDRC : good at research development and at providing international linkages.

The list is not exhaustive and intended only to provide illustrations. There are certainly many more.

(3) Centre specific programs: training in a research context.  
The Centre has experience in the use of this format both in providing support for supervised research as a learning experience and by the provision of pre/in/post project awards.

I feel that supervised research programs for junior scholars should continue to be supported but given relatively lower priority. They are useful for the reasons already stated of contributing to the formation of a research culture and of identifying a pool of promising candidates to be recruited for higher level training in research.

The major thrust however should be on support for higher level training for personnel involved in Centre funded research projects. Projects themselves should be developed around programs and institutions relating to clearly defined development objectives affecting a specific locality or region. Training components should be strong and deliberate and be geared to both the performance of the research and to the capacity to act on the conclusions of the research. Such a project implemented, say in the Outer Islands of Indonesia, could have considerable impact for self-sustained development by generating not only strategies for development but also personnel to implement them. 1/

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1/ The paper by Jeff Romm on "Regional Development in Kalimantan: Research and Training Needs" listed in Appendix III provides a most insightful treatment of this approach. Although a project of the magnitude described in the paper exceeds the capacity of IDRC to undertake, the approach provides an excellent model for research cum training project development. The publication in which it is included is easily available through ASRO in Singapore.

If a decision is taken to substantially increase support for training in the Asian region, it would become imperative to locate a HR program officer in ASRO as Ottawa based staff are too far removed to administer such a program effectively.

In order to bring Centre program activity into stronger focus and maximise its impact, I would also suggest the need for greater reliance on solid, in depth and expert information on Indonesia as a whole and on likewise expert information on areas of program concentration in particular as a more appropriate framework for project development than chance submissions of proposals evaluated on an ad hoc basis. While it is appropriate to be responsive to Indonesian perceptions of research priorities, the local capacity to identify empirically based priority areas and to formulate quality research designs to act on them is limited for reasons explained in this report. There is a need therefore for greater expert external inputs to develop these submissions into meaningful projects. Going beyond individual projects to the formulation of program areas to be supported, this I feel should be done following the advice of persons having special Indonesian expertise and a capacity to identify and evaluate the feasibility of program development options. Given the present relative shallowness of Centre expertise on Indonesia and time constraints of Centre program staff to conduct the investigations needed in suitable depth, the commissioning of such studies by qualified consultants to guide Centre policy and action would be a wise investment not only to develop higher quality programs but to bring about a more economical and effective use of program staff time as well.

#### Postscript

I believe the Centre should take very seriously Professor Soekadji's injunction that the role of IDRC in supporting research in Indonesia is becoming trivial because of massive funding provided by others, and that it could play a much more important role by supporting training for research. I am sure that Professor Soekadji would agree that generating quality research as opposed to the "fast and sloppy" surveys in production is also part of that more important role. As documented and repeated many times in this report, Indonesia's greatest need is not funding per se but labour intensive expert participation to help plan and implement its development and to train its manpower in the performance of these tasks. At least in the case of Indonesia, increased budgetary allocations for Centre staff or Centre consultant professional inputs, even at the expense of research project development, would be an eminently rational decision. For without the professional inputs, the Centre has not *raison d'être* in Indonesia.

## INDONESIAN UNIVERSITIES

## STATE UNIVERSITIES

<u>University</u>	<u>Faculties</u>	<u>Students</u>	<u>Instructors</u>
1. Institut Pertanian Bogor (Bogor Agric. University) Est. 1953	Agriculture, Vet. Sci., Animal Husb., Forestry, Fisheries, Mechaniz. & Product Technol.	2237	540
2. Institut Teknologi Bandung (Bandung Instit. of Technol.) Est. 1959	Civil Eng. & Design, Industr Technol, Maths & Nat. Sci	7822	718
3. Institut Teknologi 10 September Surabaya. (Surabaya Instit. of Technol.) Est. 1960	Civil Eng, Mech Engin, Electr Engin, Chem Engin, Shipbuild Engin, Architect, Sci.	3749	215
4. Universitas Airlangga Surabaya Est. 1954	Med, Dent, Pharm, Vet Med, Econ, Law	4500	700
5. Universitas Andalas Padang, W Sumatra Est. 1956	Med, Agric, Animal Husb, Maths & Nat Sci, Econ, Law & Soc Sci	3000	437
6. Universitas Brakijaya Malang, E Java Est. 1953	Med, Fisher & Animal Husb, Agric, Engin, Econ, Law & Soc Sci, Publ & Business Admin.	4983	155
7. Universitas Cenderawasih Jayapura, Irian <del>XXXX</del> Barat Est. 1952	Agric, Animal Husb, Forestry, Law, Publ & Business Admin, Teach Tr, Educ.	505	44
8. Universitas Diponegoro Semarang, C Java Est. 1951	Med, Animal Husb & Fisher, Engin, Econ, Arts & Letters, Soc & Poli Sci.	6490	1175
9. Universitas Gajah Mada Yogyakarta Est. 1949	Med, Dent, Pharm, Biol, Vet Med, Animal Husb, Agric, For- est, Mech & Technol of Agric Prod, Econ, Soc & Poli Sci, Letters & Culture, Law, Philos, Psych, Geogr, Engin, Exact Sci & Maths.	15,564	1121
10. Universitas Hasanuddin Ujung Pandang, S Sulawesi Est. 1956	Med, Agric, Animal Husb, Engin, Math & Phys Sci, Econ, Soc & Poli Sci, Law, Lit, <del>Econ</del> <del>Soc</del> <del>Sci</del> <del>Psych</del>	6506	825
11. Universitas Indonesia Jakarta Est. 1950	Med, Dent, Publ H, Technol, Math & Phys, Nat Sci, Econ & Econ Ext, Law & Law Ext, Soc Sci, Lit, Psych.	9521	2018

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<u>University</u>	<u>Faculties</u>	<u>Students</u>	<u>Instructors</u>
12. Universitas Jambi Telanaipura, Jambi Est. 1953	Agric, Animal Husb, Econ, Law	683	45 full t 178 part t
13. Universitas Jember Jember, E Java Est. 1964	Agric, Econ, Soc & Poli sci, Law, Lit, Educ.	3094	266 full t 259 part t
14. Universitas Jendral Sudirman Purwokerto, C Java Est. 1960	Agric, Animal Husb, Biol, Econ.	1610	169
15. Universitas Lambung Mangkurat Banjarmasin, S Kalimantan Est. 1960	Agric, Fish, Forest, Engin, Econ, Soc & Poli Sci, Law, Teach Train, Educ.	1629	115
16. Universitas Lampung Telukbetung, Lampung Est. 1965	Agric, Econ, Law, Teach Tr, Educ.	721	45
17. Universitas Mataram Ampanan, Lombok Est. 1962	Agric, Animal Husb, Econ, Law.	785	68
18. Universitas Pulawarman Samarinda, E Kalimantan Est. 1962	Agric, Forest, Engin, Econ, Soc & Poli Sci.	472	54
19. Universitas Nusacendana Kupang, NTT Est. 1962	Animal Husb, Publ & Busin Admin, Teach Tr, Educ.	1160	59
20. Universitas Pajajaran Bandung Est. 1957	Med, Dent, Agric, Animal Husb, 10, Nat Sci, Econ, Law, Soc & Poli Sci, Lit, Psych, Publicity & Journalism.	360	1919
21. Universitas Palangkaraya Palangkaraya, C Kalimantan Est. 1963	Econ, Teach Tr, Educ.	877	17 full t 154 part t
22. Universitas Pattimura Ambon, Maluku Est. 1962	Agric & Forest, Animal Husb, 1558 Technol, Soc & Poli Sci, Law, Econ, Teach Tr, Educ.		463
23. Universitas Riau Pekanbaru, Riau Est. 1962	Fish, Math & Phys, Econ, Soc 1098 & Poli Sci, Teach Tr, Educ		474
24. <del>XX</del> Universitas Sam Ratulangi Manado, N Sulawesi Est. 1961	Med, Agric, Animal Husb, Fish, 2931 Engin, Econ, Soc & Poli Sci, Law, Lit, Educ.		309 full t 637 part t
25. Universitas Sriwijaya Palembang, S Sumatra Est. 1960	Med, Agric, Engin, Econ, Law, 4220 Teach Tr, Educ.		358 full t 716 part t
26. Universitas Sumatera Utera Medan, N Sumatra Est. 1957	Med, Dent, Agric, Engin, Math 7286 & Phys, Econ, Law, Lit, Vet Med.		626

<u>University</u>	<u>Faculties</u>	<u>Students</u>	<u>Instructors</u>
27. Universitas Syiah Kuala Banda Aceh, Aceh Est. 1961	Vet Med & An Husb, Agric, Engin, Econ, Law, Teach Tr, Educ.	2605	259
28. Universitas Tanjungpura Pontianak, W Kalimantan Est. 1963	Agric, Engin, Poli Econ, Soc & Poli Sci, Law, Teach Tr, Educ.	1322	51
29. Universitas Telukbetung Telukbetung, S Sumatra Est. 1965	Law, Econ, Educ, Agric.	?	?
30. Universitas Udayana Den Pasar, Bali Est. 1962	Med, Vet Med & An Husb, Agric, Engin & Techn Sci, Law & Soc Sci, Lit, Econ, Teach Tr, Educ.	2467	270

PRIVATE UNIVERSITIES

1. Universitas 17 Agustus 1945 Jakarta Est. 1952	Busin & Publ Admin, Law, Poli ? & Soc Sci, Technol, Pharm.	?	?
2. Universitas Kristen Indonesia Jakarta Est. 1953	Educ, Engl Langu & Lit, Econ, Law, Med, Technol.	2556	443
3. Universitas Bogor Bogor Est. 1958	Law, Econ, Lit & Educ.	350	60
4. Universitas Jajabaja Jakarta Est. 1958	Law, Econ, Sociol & Business ? Management	?	?
5. Universitas Ibnu Chaldun Bogor Est. 1958	Econ, Law, Educ & Lit	?	?
6. Universitas Ibnu Chaldun Jakarta Est. 1956	Journal, Soc & Poli Sci, Law.	1000	80
7. Universitas Islam Jakarta Jakarta Est. 1951	Law & Soc Sci, Econ, Educ.	309	39
8. Universitas Islam Indonesia Yogyakarta Est. 1945	?	4050	181
9. Universitas Islam Sumatera U Medan, N Sumatra Est. 1952	Law, Islam Law, Econ, Educ, Engl Lit, Teach, Compar Rel, Islam Educ, Poli Sci, Agric, Med, Engin.	2289	330
10. Atma Jaya Catholic University Jakarta Est. 1960	Econ, Soc & Poli Sci, Educ, Technol, Law, Med.	1950	328
11. Universitas Katolik Parahyangan Bandung Est. 1955	Econ, Law, Technol, Soc & Poli Sci	3200	250

<u>University</u>	<u>Faculties</u>	<u>Students</u>	<u>Instructors</u>
12. Universitas Krishadwipajana Jakarta Est. 1952	?	2000	128
13. Universitas Muhammadiyah Jakarta Est. ?	Educ, Law, Lit, Sociol.	?	?
14. Universitas Nasional Jakarta Est. 1949	Soc Sci, Poli Econ, Biol, Sci, ? Indon & Engl Lit, Pharm.		?
15. Universitas HKBP Mohensen Pematang Siantar, N Sumatra Est. ?	Econ, Busin Mgmt & Admin, ? Educ, Engl Lit.	?	?
16. Satya Wacana Christian Univ. Salatiga, C Java Est. 1956	Law, Econ, Biol, Agric, Electr 2291 Engin, Theol, Res Inst Soc Sci.		120
17. Universitas Tarumanegara Jakarta Est. 1959	Econ, Law, Engin, Med.	1929	249
18. Universitas Tjokroaminoto Surakarta (6 branches) Est. 1955	?	4000	100
19. Universitas Trisakti Jakarta Est. 1955	Engin, Med, Dent, Law & Soc Sci, Econ.	7765	803
20. Universitas Veteran Republik Indonesia Ujung Pandang, S Sulawesi Est. ?	Hist, Law, Educ.	?	?

Sources: RIHED 1973

The World of Learning 1977-1978. London, Europa Publications, November 1978

## Appendix II

### Persons interviewed during the consultancy

#### 1. JAKARTA

##### Yayasan Ilmu-Ilmu Sosial (Foundation for the Social Sciences)

Prof. Selo Soemardjjan, Chairman  
Prof. Hafid, Dty Chairman  
Mr. Soemarman, Executive Secretary  
Dr. Harsja Bachtiar  
Dr. Alfian  
Dr. Puljento Sumerdi, Director, Jakarta Social Research Training Station

##### Center for Research and Development for Education and Culture (BP3K)

Dr. Waskito Tjiptosasmito

##### Yayasan Indonesia Sejahtera (YIS)

Dr. Lukas Hendrata, M.D., Program Director

##### National Scientific Documentation Center (PDIN)

Miss Luwarsih Pringoadisurjo, Director

##### Agency for Logistics (GULOG)

Mr. Suahja, Project Leader, Post-Harvest Rice Technology Project  
Mr. Mohammad Amin

##### University of Indonesia, Faculty of Social Sciences (FIS)

Prof. Miriam Budiardjo, former Dean

##### Center for Strategic and International Studies

Dr. Hadi Soesastro, Director of Studies

##### Directorate General of Higher Education

Dr. Achyani Atmakusuma, Director, Research and Community Service Development

##### Yayasan Kusuma Buana (YKB)

Dr. Firman Lubis, M.D., Executive Director

##### Ford Foundation

Mr. Tom Kessinger, Representative  
Mr. Michael Morfit  
Mr. Michael Smith  
Mr. William Cummings  
Mr. Michael Leigh  
Mr. Peter Burbridge

##### USAID

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USAID

Mr. Robert Schmedink, Chief, Education and Human Resources  
Mr. James Thomas Ward, Development Training Officer

Canadian Embassy

CIDA Program Officer sitting in for Gerry Kramer

2. BALAND, East Java

Brawijaya University, Faculty of Agriculture

Prof. H. Soetono, Dean  
Mr. Bambang Guritno, Manager, Cassava Project  
Mr. Abdul Cholil, Cassava Project  
Miss Damayanti Adidharma, Cassava Project  
Mrs. Tjuk Sasuki, Cassava Project

3. UJUNG PADANG, South Sulawesi

Hasanuddin University

Prof. Hardjono, M.D., Vice-Rector for Research and Academic Affairs.  
Prof. Robert H. Wattinena, Faculty of Economics  
Prof. Jacob Maricar, Faculty of Economics

Provincial Agricultural Office

Mr. Radjaoe A. Basir, Dty Inspector  
Mr. Zubair Suyuthi, Research Officer

4. YOGYAKARTA

Sayah Mada University

Prof. Soekadji Ranuwihardjo, Rector  
Prof. Soerastopo Hadisoemarno, Dean, Faculty of Geography  
Dr. Ida Bagoes Mantra, Faculty of Geography  
Drs. Sutanto, Director, Training Center for Remote Sensing  
Dr. Sofian Effendi, Population Studies Center  
Dr. Mulyarti, Institute of Rural and Regional Studies  
Dr. Soetatwo Hadiwigono, Dean, Faculty of Economics  
Dr. Soelistyo, Dty Dean, Faculty of Economics  
Dr. Soedarsono, Director, Pasca Sarjana Program, Fac. of Economics  
Mr. Wargono Adisoewignyo, ADC/RRTP grantee, Pasca Sarjana Progr. Fac. Econ.

IKIP Sanata Dharma

Mr. Petrus Soedarno, IDRC/HR Post Project Award, MA Cand. UPLB

Rockefeller Foundation

Mr. Joe Black, Representative



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5. BOGOR

Agro-Economic Survey -- Rural Dynamics Study

Dr. Rudolf Sinana, Project Leader

Bibliotheca Bogoriensis (Central Library for Biology and Agriculture)

Dr. Prabowo Tjitrobramoto, Director

Bogor Agricultural University

Dr. William L. Collier, ADC Associate, Social Economic Dept.

Central Research Institute for Food Crops (CRIA/AARD)

Dr. A. Hidayat, Head, Plant Physiology Dept.

6. MEDAN, North Sumatra

University of North Sumatra (USU), Faculty of Medicine

Dr. Sahtiar Ginting, M.D., M.P.H., Former Dean

Dr. Jazatul Anwar, Dept. of Pharmacology, Director, Center of Ecological Studies.

Dr. Erjan Albar, Head, Dept. of Obstetrics and Gynecology.

Dr. Chalik, Dept. of O & G.

Dr. Syarif Husin Lubis, M.D., M.P.H., Collaborative Fertility Project.

7. SINGAPORE

ASRC

Jinajai Hanchanlash, RD

Marjorie Koblinsky, HS

Shahid Akhtar, IS

Robin Hallam, AFMS

Leon Chico, Technonet

Regional Institute of Higher Education and Development (RIHED)

Dr. Selvaratnam, Director

Miss Nambiar, Documentation Officer

8. BANGKOK

Ford Foundation

Dr. Peter Weldon, formerly of the Jakarta Office.

Agricultural Development Council (A/D/C)

Dr. Ralph Retzlaff, ADC/RRTD Director

Dr. Gerry Rixson, ADC/RRTD Fellowship Officer

## Appendix III

### REFERENCES

- Atmakusuma, Achjani. "Problems of university growth in Indonesia". In Amnuay Tapingkae (Ed.). The growth of Southeast Asian universities: expansion versus consolidation. Singapore, RIHED, 1974.
- Atmakusuma, A. et al. The role of the provincial universities in regional development in Indonesia : an assessment. Singapore, RIHED, 1974
- Bachtier, Harsja W. "The university and society in Indonesia: a country report". In Nasution and Virasai (Ed.). Higher Education and social commitment. Singapore, RIHED, 1975
- Collier, William L. The future role of Western non-profit foundations in developing agricultural economics training and the profession in Indonesia. Bogor, February 18, 1980. (Mimeo)
- Cummings, William R. Towards an educational research system responsive to Indonesia's diversity. Jakarta, Ford Foundation Jakarta Field Office, Draft for Comment, April 1980. (Mimeo)
- Far Eastern Economic Review. Asia 1979 Yearbook. Hong Kong, Far Eastern Economic Review Ltd. 1979
- Fisher, Charles A. South-East Asia. A social, economic and political geography. London, Methuen & Co. Ltd. 1964
- Hardjasemantri, Koesnadi. "Problems of expansion versus consolidation of higher education in Southeast Asia". In Tapingkae (Ed.) The growth of Southeast Asian universities: expansion versus consolidation. Singapore, RIHED, 1974.
- \_\_\_\_\_. "Relationship between Perbina and non-Perbina institutions". In Yip Yat Hoong (Ed.) Roles of universities in local and regional development in South-east Asia. Singapore, RIHED, 1973
- Morfit, Michael. "The social science research system" (in Indonesia). Jakarta, Ford Foundation Jakarta Field Office, Draft, n.d. (1980). (Mimeo).
- \_\_\_\_\_. "Toward a coherent strategy for social science development"(in Indonesia). Jakarta, Ford Foundation Jakarta Field Office, Draft, n.d.(1980). (Mimeo).
- Partoatmodjo, Soeratio. "Indonesia". In Seah Chee Meow and Soeratio Partoatmodjo. Higher education in the changing environment, case studies: Singapore and Indonesia. Singapore, RIHED, 1979.
- Romm, Jeff. "Regional development in Kalimantan: research and training needs". In Yip Yat Hoong (Ed.). Roles of universities in local and regional development in Southeast Asia. Singapore, RIHED, 1973. (First prepared as a report to the Ford Foundation after a survey of Kalimantan in 1971).
- Smith, M.A. Training for Indonesian agriculture: the need for the people. World Bank Mission for the Review of the Supply and Demand for Technical and Managerial Manpower in Agriculture, January - February 1980. April 1980. (Mimeo).