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**Collaborative Research
and
Training Activities**

**Government of Malaysia
and
The International Rice Research Institute**

INTRODUCTION

- o The collaborative programs with Malaysia were reviewed during the visit of Dr. M.S. Swaminathan on August 6 and 7, 1984. Meetings were held with MARDI Director Dr. Yusof bin Hashim, Dr. Enbi Yusoff, Director of the Rice Division and UPM Vice Chancellor Dr. Nayan bin Ariffin and his staff. A summary of the discussions appear in Attachment 1.
- o To facilitate greater participation of Malaysian scientists in IRRI's graduate programs, IRRI entered into a memorandum of agreement with the Universiti Pertanian Malaysia (UPM) in 1983. The agreement has been modified into a tripartite agreement including the Malaysian Agricultural Research and Development Institute (MARDI). Copies of both agreements are appended (Attachments 2 and 3).

Attachment 1

Malaysia-IRRI Collaboration in Rice Research and Training

MALAYSIA-IRRI COLLABORATION IN RICE RESEARCH AND TRAINING

Discussions were held in Kuala Lumpur on August 6 and 7, 1984 on the further strengthening of the joint research and training programs. Dr. Mohd Yusof Bin Hashim, Director, Malaysian Agricultural Research and Development Institute (MARDI) and Dr. Enbi Yusoff, Director, Rice Division, MARDI, participated in the discussions on rice research, held on August 6. Discussions were also held separately with Dr. Othman Omar of MARDI Bumbong Lima Station, Dr. Nik Hassani Mohamed of the Kemubu Agricultural Development Authority and Dr. Abu Bakar Mahmud, Director General, Ministry of Agriculture. On August 7, the implementation of the joint training program at the M.S. and Ph.D. levels between the University of Agriculture of Malaysia (Universiti Pertanian Malaysia) and IRRI was reviewed with Professor Nayan bin Ariffin, Vice-Chancellor; Dr. Kamarudin bin Haji Kachar, Deputy Vice-Chancellor; Dr. Mohd. Khalid bin Mohd. Nor, Dean, Faculty of Agriculture; Dr. Alang Perang Abdul Rahman bin Zainuddin, Dean, Graduate Studies; Dr. Sulaiman bin Haji Mohd. Yassin, Director, Centre for Extension and Continuing Education; and Dr. Idris bin Abdol, Director (Farms).

The following decisions were taken:

I. MARDI-IRRI Collaboration:

Policy framework. The National Agricultural Policy (NAP) of Malaysia formulated in January 1984 aims at maximizing income from agriculture through the efficient utilization of the country's resources and the revitalization of the sector's contribution to the overall

economic development of the country. In rice, NAP has stipulated that the production level aimed at will be between 80-85% of the national requirement. In order to achieve and sustain this level of self-sufficiency, rice production will be intensified through the provision and improvement of drainage and irrigation facilities in existing areas for double cropping, use of high yielding varieties and adoption of modern farming practices.

The total area under rice is about 466,000 ha out of which 246,000 ha have irrigation facilities suitable for double cropping. In 1983, rice production has been estimated to be about 1.18 million tons, sufficient to meet only 77.3% of domestic requirements. Recent surveys indicate that about 76% of rice farmers live in relative poverty. At the present population growth rate of 2.3%, the population of the country in the year 2000 is expected to be about 23.8 million. The national demand for rice is likely to be about 1.55 million tons by 1990 and 1.90 million tons by the end of the century.

Presently the national requirement is estimated to be about 1.50 million tons. During 1982, rice imports cost M \$330 million.

The target production set for 2000 A.D. is 2.9 million tons of paddy or 1.90 million tons of rice (at 65% recovery). It has been calculated by Omar and Ismail (1984) that this level of production can be reached, if the national average yield can be raised to about 3.4 t/ha from the present level of about 2.9 t/ha. This should be possible if the average yields are increased to 4.5 t/ha in major irrigation areas, 2.6 t/ha in rainfed lowland areas and 0.9 t/ha in upland areas.

In the light of the above situation, MARDI-IRRI collaboration will be focused on the following projects:

1) Strengthening on-going programs. Cooperation in IRIP, INSFFER and Asian rice farming systems program will be further strengthened. The rice farming systems program needs careful review in the context of the new National Agricultural Policy of Malaysia.

2) Genplasm collection. MARDI will be happy to assist in the collection of wild rices. However, MARDI does not operate directly in Sabah and Sarawak. Therefore, collections in these two states will have to be done jointly by IRRI, MARDI and the concerned State Departments of Agriculture. Mr. Roy Denton could visit at appropriate time to help in the collections.

3) Areas of research which require greater collaboration:

- i. Tungro virus. This is becoming a serious problem in Malaysia. MARDI would like to have a strong collaborative program of research on breeding for resistance to tungro. It was requested that Dr. H. Hibino may visit Malaysia sometime during this year to develop the collaborative project. This could be done after the Tungro Virus Workshop in Ehubaneswar in October 1984.
- ii. Water management. Collaboration would be desirable in the development of the software components of major irrigation projects. Dr. Hammond Murray-Rust could visit MARDI to develop a suitable collaborative program.
- iii. Fan. machinery. MARDI will be interested in receiving some prototypes of fertilizer placement equipment.
- iv. Whole plant utilization. MARDI would like to send a suitable scientist to the orientation program on whole plant utilization proposed to be organized by IRRI in

January 1985 in collaboration with the Carlsberg Laboratory in Denmark.

- v. Prosperity through rice. MARDI, MUDA or KADA and IRRI could jointly develop a prototype of the prosperity through rice project in the MUDA or KADA irrigation project area.
- vi. Weed control. Malaysia is now placing more emphasis on direct seeding of rice. Pre-emergence weedicides are expensive. Hence, there is need for a low cost method of controlling weeds in direct seeded rice.
- vii. Biotechnology. MARDI and IRRI could collaborate in fields of research such as the induction of somaclonal variation in rice for response to adverse soil factors.
- viii. Joint training program. Some of the MARDI staff members could be selected for doing their Ph.D. degree under the University of Pertanian (UPM)-IRRI program. This idea was also welcomed by the Vice Chancellor of UPM.

II. University of Pertanian (UPM)-IRR Collaboration:

1. Priorities in joint training at the M.S. and Ph.D levels:

The following areas will be given priority: biotechnology, soil science, plant pathology (particularly tungro virus), plant physiology, microbiology, agricultural engineering, resource economics and agribusiness.

2. Non-degree program:

The Centre for Extension and Continuing Education of UPM and IRRI could jointly organize non-degree training programs in fields such as genetic evaluation and utilization, integrated pest management and rice production. The Centre for Extension and Continuing Education of UPM has excellent infrastructure for training.

3. Seminar on Micro-Computer Applications:

UPM will be very interested in sending a participant to this seminar since the University is investing very heavily on computer hardware. UPM also organizes diploma and degree courses in computer science.

M. S. Swaminathan

Director General

8.9.84

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Attachment 2

*Memorandum of Agreement Between the Universiti Pertanian
Malaysia and the International Rice Research Institute*

MEMORANDUM OF AGREEMENT

between

THE UNIVERSITI PERTANIAN MALAYSIA

and

THE INTERNATIONAL RICE RESEARCH INSTITUTE

This memorandum of Agreement entered and executed this day of
March 3 , 1983 at
..... by and between

The Universiti Pertanian Malaysia, hereinafter referred to as
UPM, with principal office at Serdang, Selangor, Malaysia and represented
by its Vice Chancellor, Professor Dr. Nayan bin Ariffin

and

The International Rice Research Institute, hereinafter referred
to as IRRI, with principal office at College, Laguna, Philippines and
represented in this Agreement by its Director-General, Dr. M.S.
Swaminathan.

WITNESSETH:

Cognizant of the need to provide relevant high quality education
to improve capabilities for agricultural and rural development;

Realising the need to provide enlightened and progressive leader-
ship in scientific and technological education necessary for the
advancement of agricultural and rural development;

Aware that The Universiti Pertanian Malaysia as a leading agricul-
tural university in Southeast Asia, as a centre for graduate studies in
many disciplines and various fields of agriculture, and as an Institution
of Higher Learning has been mandated to provide high quality training
and education in agriculture and related fields;

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Considering that the International Rice Research Institute as a world center for rice research, has also been mandated to assist in improving rice production in developing countries by producing appropriate technology and to strengthen scientific personnel capabilities of institutions in developing countries working on rice;

Recognising that UPM and IRRI have a common dedicated interest in pursuing a manpower development program for the well being of Asians and the betterment of mankind.

NOW, THEREFORE, in consonance with the above premises, UPM and IRRI hereby agree and covenant on the following terms:

1. UPM and IRRI will collaborate on the academic training of scholars from Asian and other interested developing countries;
2. UPM and IRRI will collaborate on the development and implementation of specific projects.

ARTICLE I

This Memorandum of Agreement may be supplemented by workplans to be developed jointly, which describe more specifically the activities to be carried out under this cooperative program and which set forth the envisaged contributions of each party. These workplans may originate with either party but will require the full approval of both parties for implementation.

ARTICLE II

The parties to this Agreement may, by mutual consent, add, modify, amend or delete any words, phrases, sentences, or articles in this Agreement.

...3/-

ARTICLE III

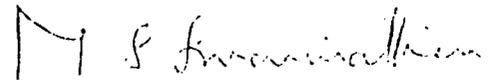
This article shall take effect at the beginning of UPM academic year 1983-84 commencing in June 1983 and shall remain in force for a period of ³.... years unless sooner terminated, revoked or modified by mutual agreement between the parties. Likewise, this Agreement may be further renewed upon mutual agreement between the parties.

IN WITNESS WHEREOF, the parties hereunto have affixed their signatures.

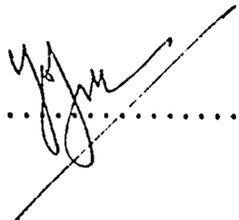
UNIVERSITI PERTANIAN MALAYSIA
(UPM)

INTERNATIONAL RICE RESEARCH
INSTITUTE (IRRI)

by: 
PROFESSOR DR. NAYAN BIN ARIFFIN
VICE-CHANCELLOR

by: 
DR. M.S. SWAMINATHAN
DIRECTOR-GENERAL

Signed in the presence of:


.....

.....

Supplementary

Workplan No. 1

SELECTION OF INTERNATIONAL RICE RESEARCH INSTITUTE
AS HOST INSTITUTION FOR UPM GRADUATE STUDENT RESEARCH
IN RICE

This Memorandum of Agreement sets forth the understanding between Universiti Pertanian Malaysia (UPM) located in Serdang, Selangor, Malaysia and the International Rice Research Institute (IRRI), located in College, Laguna, Philippines, on the establishment of linkage in high-level manpower development.

This Agreement is a supplement to the Memorandum of Agreement dated March 3, 1983 which sets forth the general agreement between the parties and shall hereinafter be referred to as Supplementary Agreement No. 1.

ARTICLE I

PLACEMENT OF UPM GRADUATE STUDENT AT IRRI

In view of UPM's effort in expanding and developing her graduate study program to include the placement of scholars in various appropriate universities and research institutions of Asia, IRRI, as a world center for rice research and dedicated to assist developing countries, agrees to admit UPM's graduate students working on rice, to IRRI and to provide tuition and academic guidance and make available scholarships while working on rice.

ARTICLE II

TERMS AND CONDITIONS

1. IRRI will submit to UPM every year a list of candidates considered suitable for admission to the M.S. or Ph.D. programs of UPM. The candidates recommended for consideration will be proficient in English.

2. After considering the applications, UPM will inform IRRI the names of those accepted for admission. IRRI will then issue him/her a formal award letter of IRRI fellowship which provides for international travel, a stipend and all standard UPM fees.

3. Each UPM-IRRI degree candidate, through the assistance of UPM Dean of Graduate Studies, together with the Dean of the Faculty concerned, shall form before the beginning of the second semester of his/her stay at UPM, a Graduate Advisory Committee with a UPM Professor as chairman of the graduate committee and at least one other UPM Professor and an IRRI staff member who will guide the research at IRRI as members.

4. Upon completion of the course work at UPM, the degree candidate will come to IRRI to conduct the thesis research, analyze data and prepare the manuscript.

5. The Chairman of the committee at UPM of Ph.D. student will visit IRRI at least once to review the progress of his/her research. This visit including lodging and subsistence while at

IRRI forms part of the IRRI fellowship award. However, there is no provision for such a visit by the Chairmen of the graduate committee of M.S. students.

6. In case of Ph.D. students, the final thesis examination would either be given at IRRI or at UPM. The conduct of this examination must adhere to the provision of the Acts and Regulations for Award of Higher Degrees of UPM. The final examinations of M.S. students will be given at UPM.

7. The UPM will grant the degree.

8. Publication of the student thesis research shall be done in concurrence with the UPM and IRRI advisors and with appropriate co-authorship. All such publications will be processed thru the IRRI editorial board.

9. UPM will bill IRRI directly for all University and related fees.

10. A detailed work plan for each student will be developed by the UPM and IRRI scientists after his/her formal acceptance under this collaborative professional advancement programme.

11. The scholarship cost of each UPM-IRRI candidate including the visit of UPM Professor of Ph.D. student to IRRI will be arranged by IRRI.

12. The degree candidate will be subject to all provisions of UPM Acts and Regulations for Higher Degrees.

ARTICLE III

The parties to this Supplementary Agreement No. 1 may, by mutual consent, add, modify, amend or delete any words, phrases,

sentences, articles in this Agreement.

ARTICLE IV

This Supplementary Agreement No. 1 shall take effect at the beginning of academic year 1983-84 commencing in June 1983 and shall remain in force for a period of 5 years unless sooner terminated, revoked or modified by mutual agreement between the parties. Likewise, this Supplementary Agreement No. 1 may be further renewed upon mutual agreement between the parties.

IN WITNESS WHEREOF, the parties hereunto have affixed their signature.

UNIVERSITI PERTANIAN MALAYSIA
(UPM)

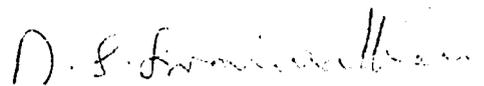
INTERNATIONAL RICE RESEARCH
INSTITUTE (IRRI)

by:



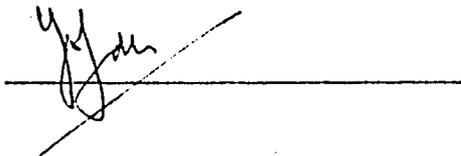
PROFESSOR DR. NAYAN BIN ARIFFIN
Vice-Chancellor

by:



DR. M. S. SWAMINATHAN
Director-General

Signed in the presence of:



Attachment 3

*Memorandum of Agreement Between Universiti Pertanian
Malaysia, Malaysian Agricultural Research Development
Institute and the International Rice Research
Institute*

Attachment 3

MEMORANDUM OF AGREEMENT

BETWEEN

THE UNIVERSITI PERTANIAN MALAYSIA,
MALAYSIAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE

AND

THE INTERNATIONAL RICE RESEARCH INSTITUTE

This Memorandum of Agreement entered and executed this day
of _____, 1984 at Serdang, Selangor by and between

The Universiti Pertanian Malaysia hereinafter referred to as
the University with principal office at Serdang and represented by
its Vice-Chancellor, Dr. Nayan bin Ariffin,

The Malaysian Agricultural Research and Development Institute
hereinafter referred to as the MARDI with principal office at Serdang,
Selangor and represented by its Director General,
Dr. Mohd. Yusof Bin Hashim,

and

The International Rice Research Institute hereinafter referred
to as IRRI, with principal office at Los Banos, Laguna, Philippines
and represented in this Agreement by its Director General,
Dr. M. S. Swaminathan.

WITNESSETH:

Cognizant of the need to provide relevant high quality
education to improve capabilities for agricultural and rural
development;

Realizing the need to provide enlightened and progressive leadership in scientific and technological education necessary for the advancement of agricultural and rural development;

Aware that the UFM is a leading agricultural university, a center for graduate studies in many disciplines and various fields of agriculture, and an Institution for Higher Learning has been mandated to provide high quality training and education in agriculture and related fields;

Aware that the MARDI has a deep interest to upgrade the research and training capabilities of its personnel engaged in the pursuit of research and extension in food production;

Considering that the International Rice Research Institute as a world center for rice research, has also been mandated to assist in improving rice production in developing countries producing appropriate technology and to strengthen scientific personnel capabilities of institutions in developing countries working on rice;

Recognizing the Institute, the MARDI and IRRI have a common dedicated interest in pursuing a manpower development program for the betterment of mankind.

NOW, THEREFORE, in consonance with the above premises, the UPM, MARDI and IRRI hereby agree and covenant on the following terms:

ARTICLE I

This Memorandum of Agreement may be supplemented by work plans to be developed jointly, which describe more specifically the activities to be carried out under this cooperative program and which set forth the envisaged contributions of each party. These work plans may originate with either party but will require the full approval of all parties for implementation.

ARTICLE II

The parties to this Agreement may, by mutual consent, add, modify, amend or delete any words, phrases or articles in this Agreement.

ARTICLE III

This Agreement shall take effect at the beginning of the Institute's academic year commencing in May, 1985 and shall remain in force for a period of 5 years unless sooner terminated, revoked or modified by mutual agreement between the parties. Likewise, this Agreement may be further renewed upon mutual agreement among the parties.

IN WITNESS WHEREOF, the parties hereunto have affixed their signatures.

UNIVERSITI PERTANIAN MALAYSIA

MALAYSIAN AGRICULTURAL
RESEARCH AND DEVELOPMENT
INSTITUTE

by:

Nayan Bin Ariffin
Vice Chancellor

by:

Mohd. Yusof Bin Hashim
Director General

INTERNATIONAL RICE RESEARCH INSTITUTE

by:

M. S. Swaminathan
Director General

Signed in the presence of:

date _____

WORKPLAN FOR COLLABORATIVE GRADUATE DEGREE PROGRAM
BETWEEN
UNIVERSITI PERTANIAN MALAYSIA
MALAYSIAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE
AND
THE INTERNATIONAL RICE RESEARCH INSTITUTE
(Supplementary Agreement No. 1)

This Memorandum of Agreement sets forth the understanding between the Universiti Pertanian Malaysia (UPM), the Malaysian Agricultural Research and Development Institute (MARDI) located in Serdang and the International Rice Research Institute (IRRI) located in Los Banos, Laguna, Philippines on the establishment of linkage in high-level manpower development.

This Agreement is a supplement to the Memorandum of Agreement dated _____ which sets forth the general agreement between the parties and shall hereinafter be referred to as Supplementary Agreement No. 1.

ARTICLE I
TERMS AND CONDITIONS

1. Every year, a list of candidates associated with rice and rice based cropping systems from MARDI will be submitted to UPM will be submitted for admission to the MS programs of the University.

2. After considering the applications, the UPM will inform MARDI and IRRI the names of those accepted for admission. The selected students will undertake course work at UPM and conduct thesis research at IRRI.

3. While the students are pursuing course work at UPM, MARDI will provide their appropriate expenses including the university and related fees to UPM. When they come to IRRI to conduct their thesis research, IRRI will issue them an award of fellowship which will include board and lodging at the IRRI dormitory, a monthly stipend for incidental expenses, partial medical aid, group accident insurance, and shipping allowance. MARDI will provide IRRI the cost of the student's fellowship. MARDI will provide the student directly the cost of transportation to and from IRRI, including the enroute travel expenses.

4. Each degree candidate, through the assistance of the UPM's Dean of Graduate School and Department Chairman concerned shall form as early as the beginning of the second semester of his/her stay at the UPM a Graduate Advisory Committee with an UPM professor as Chairman of the Committee and at least one other UPM professor and an IRRI senior scientist as members of the Committee. The formal appointment of an IRRI senior scientist on

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the Committee will be made after the student has completed his/her comprehensive examination, so the IRRI scientist's presence at the UPM will not be required during the student's comprehensive examination. The IRRI scientist will serve as co-chairman of the student's Advisory Committee.

5. To facilitate the arrangements under item No. 5 the UPM will appoint the IRRI scientist as member of its graduate faculty. For this purpose, IRRI will submit to the UPM the biodata of the concerned IRRI scientist.

6. The student's Advisory Committee will meet at least once to discuss the research proposal. The IRRI scientist will plan to attend this meeting, if possible, otherwise he/she should inform the committee of his views through the IRRI Liaison Scientist in the country or region. The cost of the IRRI's participation at the meeting will be provided by IRRI.

7. Upon completion of the course work at the UPM the degree candidate will come to IRRI to conduct his/her thesis research, analyze data and prepare the manuscript in English. However, if the thesis topics deal with problems which are not common in the Philippines, such as gall midge, deepwater rice, certain problem soils, etc., the student may conduct the thesis research either partly or entirely in Malaysia under the supervision of IRRI and UPM scientists.

8. The final examination of the students will be held at the UPM. The conduct of the final examination must adhere to the Rules and Regulations of the UPM and those of the Graduate School.

9. During the final examination all members of the student's advisory committee must be present. The visit of the IRRI scientist, including lodging and subsistence while at Serdang forms part of the IRRI fellowship.

10. The UPM will grant the degree.

11. Publication of the student thesis research shall be done in concurrence with UPM and IRRI advisers and with their appropriate coauthorship. All such publications will be processed thru IRRI editorial board.

12. The degree candidates will be subjected to all provisions of the Rules and Regulations of the UPM and those of the Graduate School.

ARTICLE II

The parties to this Supplementary Agreement No. 1 may, by mutual consent, add, modify, amend or delete any words, phrases, sentences, or articles in this Agreement.

ARTICLE III

This Supplementary Agreement No. 1 shall take effect at the beginning of academic year 1984-1985 commencing in May 1984 and shall remain in force for a period of 5 years unless sooner terminated, revoked or modified by mutual agreement between the parties. Likewise, this Supplementary Agreement No. 1 may be further renewed upon mutual agreement between the parties.

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IN WITNESS THEREOF, the parties hereunto have affixed their signature.

UNIVERSITI PERTANIAN MALAYSIA

MALAYSIAN AGRICULTURAL
RESEARCH AND DEVELOPMENT
INSTITUTE

by:

by:

NAYAN BIN ARIFFIN
Vice Chancellor

MOHD. YUSOF BIN HASHIM
Director General

INTERNATIONAL RICE RESEARCH INSTITUTE

by:

M. S. SWAMINATHAN
Director General

SIG ED IN THE PRESENCE OF:

date: _____
