

CONCEPTION, BIRTH
AND GROWTH OF THE
JOINT FAO/IAEA DIVISION

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Björn SIGURBJÖRNSSON was born in Reykjavik, Iceland, in 1931. After finishing primary education, including farmers' school in Iceland, he obtained a BS degree in agriculture from the University of Manitoba, Canada, in 1956 and a Masters degree in plant genetics from the same school in 1957. After studying nuclear applications in agricultural research in Oak Ridge and elsewhere in the USA in 1957, he completed a PhD in plant breeding from Cornell University in 1960. He was a research scientist in the field of plant breeding at the University of Iceland until he joined the IAEA in 1963. He became Head of the Plant Breeding and Genetics Section of the new Joint FAO/IAEA Division in 1964, where he served until 1968, when he was appointed Deputy Director of the Division. He left the Agency in 1974 to become Director of the Icelandic Agricultural Research Institute. He was co-founder and later Chairman of the Board of the Nordic Gene Bank and Chairman of the Nordic Council for Agricultural Research. In 1983, FAO appointed him Director of the Joint FAO/IAEA Division. He was Chairman of the FAO Committee on Biotechnology and Chairman of the FAO Task Force on the Chernobyl accident. In 1995, he was appointed Secretary General of the Ministry of Agriculture in Iceland where he, his wife Helga and their daughter, Unnur Steina, and her family live.

CONCEPTION

In the same year the IAEA was founded, the USA invited a group of European agricultural scientists to visit major research and university centres in the USA which were actively using radiation and isotopes in food and agricultural research. The purpose was to show the European scientists how agricultural research could benefit from nuclear applications. The four-month tour, visiting some dozen university and research centres, included graduation from the 'Drip'¹ course at the Oak Ridge Institute of Nuclear Studies, Tennessee. The American tour leader was Ed Englebert, a soil scientist from Wisconsin. The European leader of the group was Vic Middleboe, an agronomist from the Agricultural University of Denmark. There was Carl Lamm, a soil scientist from Denmark, Gian Tommaso Scarascia-Mugnozza, a plant breeder from Italy, and the author, then a plant breeder from Iceland. One of the lecturers at the Agricultural Research Centre, Beltsville, Maryland, was Maurice 'Mac' Fried, a soil scientist. All the above were to become the pioneers who gave life to the eventual Joint FAO/IAEA Division seven years later, including two Directors, two Deputy Directors and Section Heads. Many other members of the group became important participants in its programmes.

Shortly after the founding of the Agency, an agricultural scientist was hired and a small number of research contracts were placed in the field of soils and plant breeding. In 1960, Mac Fried arrived at the 'Unit of Agriculture' and two years later activities were started at Seibersdorf. At the same time FAO decided that nuclear technology was important enough for it to create an 'Atomic Energy Branch', which eventually had five staff members. Unavoidably, these two entities started similar programmes and their activities overlapped and competed. Under pressure they had no choice but to co-operate to some extent. This was hard on both parties. I remember the preparations for a major conference co-sponsored by the two organizations in the early part of 1964, ten months before the beginning of the Joint Division. I went to FAO, Rome, in January 1964, as a member of the IAEA Unit of Agriculture and thus a member of the joint planning committee. I was more or less told to accept FAO's leadership and the Agency's marginal role. Agency money was OK but no interference! It was clear to me, as one who had joined the

¹ 'Dabbler in radioisotope procedures'.

Agency a few months earlier, that this situation was untenable. I did not know then that the two Directors General, B.R. Sen and Sigvard Eklund, had already come to this conclusion. Dr. Eklund later told me that the two had agreed to set up a joint Division as they sat side by side at a Salzburg festival concert!

BIRTH

The Agency had first tried to solve the problem of co-existence by posting a liaison officer in Rome. Peter Vose spent the summer of 1964 at FAO in Rome and reported to Mac that he had had nothing to do and was wasting his time. In fact he was kept out of the work of the Atomic Energy Branch as much as possible. During the summer Ed Engelbert, with the help of Peter Vose and together with the Chief of the FAO Branch, hammered out an agreement between the two organizations — in effect the constitution of the Joint Division — which today stands unchanged.

The items most difficult to resolve were first of all the location of the Division and, secondly, which organization would be responsible for the appointment of the Director and who that should be. Engelbert told me that three things had caused the Division to be located in Vienna: the large technical co-operation component of the programme financed by the Agency, the existence of the Seibersdorf laboratory, and the Agency's unique research contract programme of which agriculture already had become a major component.

Having resolved the question of location for the new Division, it became a matter of tit for tat that FAO should become responsible for naming the Director. The real surprise was that FAO chose the Head of the Agency's Unit of Agriculture, Dr. Fried, in favour of its own Branch Chief to become the first Director of the Joint FAO/IAEA Division of Atomic Energy in Agriculture as it was then known.

I remember 1 October 1964 very well. We had six Professional staff members in the Unit at the time and on that day all but me were on duty travel, so in effect I, at the tender age of 32, was the first acting Director of the new Division on that fateful day. I remember saying to the small staff present at the end of the day that I had not noticed any change. No calls from Rome and business as usual! On that day I also became Head of the Plant Breeding and Genetics Section, and together with my secretary, Johanna Hoch, we constituted the whole Section.

Nothing much changed until November, when three of the FAO staff members and one consultant moved to Vienna. None had anticipated the choice of Vienna; some had refused to move and the unhappiness of those who came with the move was unmistakable. Mac Fried organized a party upstairs in the Beethovenhaus to welcome our colleagues. We drank Grüner Veltliner, sang 'Wienerlieder' as we always did on a 'Heurigenabend' and even danced, but we learned later that our colleagues interpreted this as a celebration of our victory over them. Maybe this was not so far from the truth: we had stayed in Vienna and our beloved chief, Mac Fried, continued as our boss. They had to move from Rome, work under a different boss and, in effect, join our Unit. Unfortunately, this atmosphere was never to heal; in fact it became much worse and, for a while, very serious.

GROWING PAINS

The reaction of the Branch Chief who had expected to become Director, but instead became the Division's Deputy Director, was to try to destroy the budding Division. The next few years were a continuous struggle for survival. At every meeting of FAO's Governing Bodies until well into the 1970s, a number of delegates had been lined up and fed (mis)information about the Division to discredit its work. Fortunately, Adeke Boerma, FAO's Director General, and the senior staff stayed on our side and we succeeded in defending ourselves. During one conference, having been forewarned, almost all the headquarters and Seibersdorf staff headed for Rome for our defence and counterattack. We all stayed in the same hotel. Mac Fried held strategy meetings and we, in effect, divided the delegations between us and made contacts. Yehia Barrada got the Middle East, Hans Broeshardt Central Europe and Peter Vose the United Kingdom. Mac handled the Americans and I got the Scandinavians and Canada (since I had studied there). This was certainly not very ethical but in the face of the hundreds of memo pages which had been distributed to delegates by our adversary, our choice was either to fight or give up — which would have certainly meant the end of the Joint Division. Aside from the ethics, our methods were to use facts only and rely on our quite successful record.

At one point, both the Directors General got a letter demanding that I be sacked. I had then replaced the Branch Chief as Deputy Director and was accused of having lied to the highest UN committee on science and technology.

What saved me was a tape recording of the proceedings, revealing my innocence. In spite of these birth pains — and in retrospect possibly because of them — the Division flourished. The number of staff grew, the budget grew, we tried our very best and our self-esteem grew and all this because we were able to show that the programmes were actually helping developing countries.

SEIBERSDORF

In 1962, Hans Broeshardt, a Dutch soil scientist, started the agricultural activities at Seibersdorf. With him were Helmut Brunner and later Helga Axmann. They did some isotope analyses for the new International Rice Research Institute in the Philippines and were paid \$15 000 for it. In those days one could keep what one earned and Fried decided to build a 'temporary' laboratory building. That became the agricultural building until a new wing was built in 1986. The old 'barracks' are still there and still being used, at least for storage.

Agriculture did not get much space in the elegant main laboratories. Fried needed to expand and discovered that there was a sort of basement under the main building with a low ceiling and all cluttered with pipes and service utilities. Not being tall himself, he simply hired John Monroe, an equally short Australian entomologist, who in 1964 started work on both the tsetse and the medfly and had no difficulty manoeuvring under the pipes.

An FAO appointed review committee in 1966, headed by Sir John Cockcroft and including the rather tall Swedish Professor Ake Gustafsson, was appalled at having to crawl under the pipes in order to inspect the SIT (sterile insect technique) activities which it found to be of utmost importance and deserving of more dignified surroundings. The result was that FAO Director General Boerma decided to pay for a modern laboratory building for entomology research. This was the first tangible sign of FAO's pleasure with its new Joint Division.

THE EARLY YEARS

When I joined the Agency in October 1963, there were specialists in soils, food preservation and entomology. Per Göran Knutsson, a Swedish scientist, started the programme on livestock in 1965 and Gordon Wortley

who had come from FAO expanded his programme on fallout measurements to include initial studies on chemical contamination by pesticides. Another staff member, recruited from FAO, Peter Winteringham, a well known pesticide chemist, later expanded the programme in the area of agrochemicals. A Swedish scientist, Lars Erickson, headed the activities on food irradiation. We all thought Lars, who was in his thirties, was brilliant. He had been at FAO in Rome for a meeting in April 1964 and came back not feeling well. He did not think much of it, but in a few days he was dead from a burst appendix. The best ones die young. By 1969, after I had been appointed Deputy Director, the Division had taken on all the disciplines that now comprise its programme.

PROGRAMME DEVELOPMENTS

Of course many things have changed. New sophisticated technology started giving nuclear techniques serious competition. In the early 1980s, biotechnology reared its head. Many thought this was a better alternative technology, posing a threat to nuclear techniques. It was overlooked that the new biotechnology laboratories had more radiation warning signs than Seibersdorf: DNA work depended on phosphorus-32 labelling of one of the DNA strands! Gradually biotechnology became a part of the Division's programme. It is now even included in the name of the Seibersdorf agricultural laboratory. As of the early 1970s there was talk that nuclear techniques had become obsolete and would be taken over by new, more sophisticated methods, leaving 'nuclear' institutions as stranded whales. This of course was far from the truth. What was overlooked was the fact that nuclear technology is based on the most fundamental elements of nature, and thus can never be replaced. All other new technologies are a refinement, based on the same basic principles. This is precisely what happened: new technology was adapted and added to the arsenal of tools. Nuclear laboratories now use a mixture of 'nuclear' and 'non-nuclear' techniques and ordinary research establishments also adopted nuclear technology. In some instances the word 'nuclear' or 'atomic' was dropped from the name of the laboratories, sometimes as a reaction to the anti-nuclear lobby. In retrospect it must have been the wish of the Agency to have nuclear technology introduced into the mainstream of science.

In fact it had always been the main principle of the Joint Division to be task or problem orientated as opposed to technique orientated. The words

'nuclear' or 'atomic' were only found in its name and detailed description of activities, never in its programme titles. The six Sections of the Division and the five Units at Seibersdorf were identified by the subject matter only. Mac Fried always emphasized to his staff that when they drew up their draft programmes and proposed priorities they should first determine the importance of the food and agricultural problems which nuclear techniques could help solve and not the reverse. On our travels and visits to many atomic energy establishments, which included agricultural laboratories, we had seen too many examples of physicists playing around with some elegant nuclear technique and trying to find a problem that would fit it.

All the staff members of the Division were agricultural or food scientists with the highest educational degrees and experience in an agricultural discipline — all of whom had also had training and experience in the use of isotopes and radiation. Fried used to tell a story from a meeting in the Division of Isotopes, where the Unit of Agriculture was located in the early 1960s. The Director of the Division had said that the Unit needed to hire a physicist. A young entomologist on the staff exclaimed: "What in the world would we do with a physicist?" This was certainly not meant to belittle physicists and their specialty, but the truth was that the IAEA in those days was overflowing with physicists and there were very few 'aggies'! We worked with these physicists who were our good colleagues and friends and were always ready to help and advise us.

THE FAO CONNECTION

While the Joint Division from the beginning was well accepted and even respected within the IAEA, it took a long time for FAO's sister Divisions to accept the fact that here was a Division, located far away from headquarters, with its own programmes dealing with the same subject matters that the other FAO Divisions were dealing with and therefore stepping on everybody's toes, and meddling, so to speak, in everybody else's business. The Plant Production and Protection Division, for example, was engaged in improving plants and claimed that it was free to use any technique, including radiation induction of mutations. In some ways this was beneficial: in the early days that particular FAO Division helped the Joint Division carry out nearly all its programmes in plant breeding. They helped us run the first rice mutation breeding programme in Asia; they organized field trials of mutant

wheat varieties, which had been developed by Scarascia-Mugnozza, all over the Middle East and North Africa, and co-operated in a large protein improvement programme.

In retrospect it was perhaps regrettable that as the Joint Division established itself with its own, independent programmes, this close co-operation with other FAO units decreased to some extent. There was a lot of turf fighting and considerable doubt on the part of our colleagues that our technology would ever leave a dent in the great struggle to improve food security in the world. This was particularly noticeable in the fight against insects, where SIT was not readily accepted. It was not until the screwworm episode in the Libyan Arab Jamahiriya (Libya) that FAO finally recognized its importance — and in fact the corresponding FAO Division tried to run away with it, claiming all the credit, even though all of the expertise and the technical leadership had come from FAO's joint programme with the IAEA. In all later references to that immensely successful project, however, the role of the Joint Division has always been prominently featured. The use of SIT for tsetse eradication was introduced to the field against often active opposition by the Rome colleagues. In food irradiation there were two camps in FAO: one giving strong and very effective support, the other dragging its feet and even actively opposing. In the field of soil and water there was always good support and good relations. This may have been because of a lack of overlapping: our techniques complemented whatever they were doing.

This support was evident when Eduard Saouma was Director of the FAO Land and Water Division. That goodwill carried over when Saouma became Director General. He always supported the work of the Division and was largely responsible for the buildup of the physical facilities at Seibersdorf. On the 20th anniversary of the Joint Division in 1984, an FAO Regional Conference for Europe was held in my home town of Reykjavik. I asked Mr. Saouma if he would give the Division a birthday present. I said we needed a new agronomy laboratory for Seibersdorf. Maybe it was our presence on my home territory, but Saouma agreed on the spot on condition that the IAEA would match his contribution. He called Rome and confirmed this while we talked and, fortunately, IAEA Director General Hans Blix agreed and a beautiful, modern laboratory facility was built. Saouma had been a Director of an agricultural research institute in his home country, Lebanon, and really loved the Seibersdorf laboratory and felt strongly that it should also be an international centre for training in advanced scientific technology for agriculture. The Training Wing followed and later he insisted that we should also provide

an international reference and training centre for food quality and pesticide control at Seibersdorf. His term in office came to an end before that could be started, but now that project is at least in the opening phase. At FAO staff meetings Mr. Saouma often expressed pleasure over the work of the Joint Division and often exhorted his other Divisions to use us as an example of how to do things. This of course did not endear us to our colleagues.

The Joint Division was fortunate to have as heads of FAO's Agriculture Department, of which the Division is a part, a series of excellent Assistant Directors General, all from Germany — Otto Fischnich, Dieter Bommer, Christian Bonte-Friedheim and Hartwig deHaen who both liked and supported the work of the Division.

Cultivating good relations with FAO took a lot of time and a lot of effort. It meant endless travels to Rome and many meetings with colleagues. When my Agency colleagues complained about their workload in running their Divisions, I could only chuckle; the poor Director of the Joint Division had everything twice over as we had to meet all administrative and fiscal demands of FAO as well as the IAEA, which means that the Joint Division has double the amount of paper preparation and report making. I do not ever remember being able to use the same document or paper for both organizations. The mandate, structure and methods of operation of the two organizations are so different that this was (and is) not possible.

The Animal Production and Health programme was initially slow in starting, possibly because of a rapid change of Section Heads. It was in the mid-1980s that it took wing: a laboratory unit was created, a number of Co-ordinated Research Programmes organized and a vigorous technical co-operation programme developed. The origin of the Animal Laboratory Unit was extraordinary. We had long wanted to create such a unit, but bad times had come with zero growth budget and there was no possibility of expansion. Then by coincidence two developments made this possible. The organizational structure of the Agency was being updated and Seibersdorf showed only the Agriculture and Entomology Units. Instead of only adding Plant Breeding and Agrochemicals, I included an Animal Unit. Before this slip-up was noted, the new Unit was already alive with activity. Of course we had no staff, but our other lucky break was that another entity had some inter-staff problems and we were asked to safekeep one position together with the incumbent. We thus had staff. The rest of the duties were fulfilled by the energetic and imaginative headquarters staff. Finding space for this growing 'hawk' was another thing. It really behaved like a hawk in somebody else's nest and soon had

elbowed its way into a few rooms! The animal programme became the most active, even though one could never tell by checking budget figures. (This only proves the truth in the saying that 'zero growth is better than no growth at all!')

In the beginning FAO hardly noticed this programme and relations were cordial. With the rapid increase in activity, FAO's counterpart Division started to raise eyebrows and soon a big fight was looming. I discussed this with my counterpart and we decided to call a meeting in Rome of the senior staff of both sides. One night the small Vienna staff headed with me for Rome and, at the invitation of my fellow Director, we headed straight for his home where he had assembled all his senior staff. It was a lively party. In his part of the world vodka was supreme and it did the trick again. When we met at FAO Headquarters the morning after, there was nothing to do but sign the papers and shake hands. As far as I know, there are to this day the most cordial relations and close co-operation between these units.

THE IAEA CONNECTION

The position of the Joint Division in the Agency was quite different. Nobody else dealt with agriculture and everybody dealt with nuclear aspects. In the Agency we were one part of the whole structure, a part of the applications side which always forms the counterweight to the control side — safeguards. As such, a successful agricultural programme contributed to the good reputation of the whole Agency. Our success was everybody's success. The various governing bodies, committees, the Board and the General Conference were appreciative and supportive, almost without exception.

The Agency is very much involved with the safeguards aspects of the nuclear world and rightly so. Aside from that, its main mission sometimes seemed to be preaching the gospel of nuclear power. As that ran into opposition and difficulties, the other, less grandiose applications gained in importance. Even though nuclear technology faced increasing competition from other developing and sophisticated technologies, even prompting some delegations to proclaim their obsolescence, their importance only increased over the years. As noted above, nuclear techniques gradually became part of a wider arsenal. If the Joint Division had not followed suit it would not have survived. Its programmes became known as dealing with 'nuclear and related techniques', a concept which gave the Division a wide mandate indeed.

Understandably this concept was difficult to accept in the beginning. To its credit the Agency acknowledged the new realities and recognized the direction in which scientific thought and technology were heading and allowed more flexibility in its programmes. Thinking back to the considerable resistance we encountered, I believe the main credit for this sensible approach lies with the clear concepts of the future in the mind of Hans Blix.

FAO's position on a wider mandate for the Joint Division was ambiguous. When I replaced Mac Fried, my superiors in FAO could not see a clear future for the Joint Division if it dealt only with isotopes and radiation. I was encouraged to widen the scope to include non-nuclear activities. The Division was even entrusted with the leadership in biotechnology for the whole organization and I presided over an organization-wide committee to guide FAO's entry into this new field.

Gradually it dawned on some sister FAO Divisions that the Joint Division was walking away with some of the most exciting new developments in agriculture and objections were raised. It really was a tightrope walking exercise, but in the end all agreed that the Joint FAO/IAEA Division was in fact the only truly research oriented Division in the organization; even FAO's Division on Research and Technology Development was not actively supporting, dealing with or carrying out research like the Joint Division. During a Committee on Agriculture meeting at FAO in April 1997, I met a number of former colleagues and my conclusion is that the Joint Division is as fully integrated into FAO's organizational structure as one could hope for. It has gained acceptance as a vital part of FAO, respect for its activities, appreciation of its willingness to co-operate, and recognition of the tangible beneficial results its programmes have provided to developing countries.

LIVING UP TO EXPECTATIONS

The Agency celebrates 40 years of its existence this year. The separate agricultural activities in the nuclear field at the IAEA and FAO started about the same time, although they were not joined together until seven years later. The Joint FAO/IAEA Division presents a rare, if not unique, example of interagency co-operation in the UN system. Considering the complexities of operating a programme of work under the supervision and control of two separate administrations, answering to two Departmental Heads and two Directors General, undergoing the scrutiny of two separate sets of Governing

Bodies and dealing with two sets of programmes and budgets which are out of phase, it is a wonder that the Division is still functioning and — as it appears — to the full satisfaction of both parent organizations.

This would not be so if this was only an exercise in complex administration; without concrete results which Member States recognize and appreciate, the Division would not exist.

Looking over the 33 years of the Joint FAO/IAEA Division and 40 years of food and agricultural applications of atomic energy in the UN, it is clear that the early visions and hopes for the benefits deriving from the peaceful applications of nuclear techniques have been largely fulfilled.

The history of the Joint FAO/IAEA Division was assembled and written by Carl Lamm, a former Deputy Director of the Division, and published on the occasion of the 30th anniversary of the Joint Division in 1994. It contains a comprehensive account of persons involved and events that took place. On the same occasion the Agency also issued a publication written by another former staff member, Peter Vose, entitled *Thirty Years of Benefits from Nuclear Techniques in Food and Agriculture*.

The benefits have been both direct and indirect, arising from the graduation of thousands of scientists from training courses and fellowship training, from the important results of thousands of research projects, partly financed and organized within hundreds of Co-ordinated Research Programmes, each with 10–20 scientists attempting to solve an agricultural problem within a five-year period.

Then there are the results and impacts from the number of technical co-operation projects throughout the developing world and the effect on the scientific community of the number of technical publications, manuals, handbooks and conference proceedings. And, uniquely in a UN system, the Joint Division has conducted its own, supportive research at the Agency's Seibersdorf laboratory.

It has been said that the influence stemming from the mere existence and intensity of the activities of the Joint Division may have stimulated directly and indirectly at least half of the applications of nuclear technology in food and agriculture worldwide over these years. Many of the results have come from projects supported and co-ordinated directly by or through the Division in each of its six disciplines.

One of the first programmes in plant breeding aimed at developing simple and effective methods of mutation breeding. The result was a manual, published in the late 1960s. It became the 'bible' on mutation breeding for

plant breeders worldwide. It was translated into Chinese long before China joined the Agency and laid the framework for the immensely successful Chinese programme in this field where about 10% of the total acreage in China is now under mutant crops. The *Mutation Breeding Newsletter*, published by the Division, now lists almost 2000 plant varieties which originated from the use of these techniques. The majority of these can be traced to work by scientists co-operating in the Division's programme. The economic benefits to farmers and consumers from these improved crop varieties are enormous.

The use of isotopic tracers to exactly locate and follow the movement of atoms of fertilizer elements has laid the groundwork for more efficient fertilizer practices, placement, timing and composition which now are in general use throughout the world. The management of expensive irrigation systems has been greatly improved by the continuous monitoring of soil moisture by neutron measuring devices. Stable isotopes used to study nitrogen fixation have greatly contributed to the more effective use of legumes and symbiotic bacteria in this environmentally friendly method of providing plant nutrients.

Some rather spectacular results have come out of the entomology programme, where radiation is used to sterilize insects and mass release them into affected areas by the sterile insect technique. The emergency eradication of the New World Screwworm from Libya in 1991 has been singled out by FAO as one of its most dramatic and successful projects ever. The steady progress in eradicating the Mediterranean fruit fly using SIT is already resulting in savings of billions of dollars from the reduced use of pesticides and particularly from the opening up of otherwise closed markets for fruits. The total eradication of this pest from Mexico and Chile and the progress made in Argentina illustrate this point.

The Division's work on animal diseases is mainly based on diagnostic techniques using radioimmunoassay and the related, enzyme based method. The Division and the corresponding Unit at Seibersdorf are now the official reference points for such diagnostic services, playing a pivotal role in FAO's effort at eradicating rinderpest from Africa. Isotopic labelling of reproductive hormones has also greatly contributed to more efficient livestock production in many developing countries.

It is not so easy to see where the Division's activities in food irradiation have led to. It has been said that without the Joint Division, this technology would not be pursued at all! From a strictly economic point of view the impact of food irradiation so far has only been modest. The general fear of nuclear radiation and the Chernobyl incident have drastically slowed down

universal acceptance of this method as an effective and often unique means of preserving food and guaranteeing wholesomeness. The Division has worked primarily through the International Consultative Group on Food Irradiation in this field.

The Division's work has been increasingly involved with environmental protection. In fact most of its work enhances environmental quality: more effective use of fertilizers, disease resistant plants, eradication of harmful insects without using chemicals and chemical-free food preservation. One of its programmes, furthermore, has contributed significantly to improved management of pesticide use by employing isotopic tracers to study the fate and significance of pesticides and their residues in plants, animals, soil and water.

On the 40th anniversary of the Agency it can be concluded that the Joint FAO/IAEA Division has earned its place as an important component of its activities. The results of its worldwide programmes are benefitting farming operations in developing as well as developed countries throughout the world. It has demonstrated how UN organizations dealing with subjects as far apart as food and nuclear science can successfully operate a joint programme and in full harmony. Judging by comments made by delegates to the recent FAO Committee on Agriculture, this appreciation of the Joint Division is shared by FAO.