

University Report

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UNIVERSITY REPORT

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COSMO PIETERSE:

Today we hear from Central Africa, from Malawi, about a many-faceted research endeavour. But a moment's digression to introduce the Malawi Project.

Two weeks ago we included a report from Sierra Leone which made a strong recommendation that work in the Institute of African Studies at Fourah Bay College, Sierra Leone should be inter-disciplinary. And last week a researcher in African Studies at the University of Ghana, Legon, stressed the closeness, even the sameness, between related disciplines like Sociology and Anthropology, the identity of theoretical, statistical studies and work in the field, the linking of the pure and the applied sciences. And many University Reports have mentioned relevance, the applicability of work in the Universities of Africa to the lives of the people who support these "institutes of higher learning". Many people often wonder whether this talk of interdisciplinary studies, of applied research, talk of socially relevant universities - is just that - only TALK, mere lip-service. Well --.

COSMO PIETERSE:

Today's main report comes from Malawi. It deals with the University of Malawi's Lake Chilwa Co-ordinated Research Project. Already the five year old project has borne fruit, much of it practical. Now perhaps a large measure of the practicability of the findings of this project was due to its particularness and details. Towards the end of his discussion with our Malawi reporter Douglas Lamb, one of the researchers, namely Dr. Peter Mwanza, a biologist, speaks of the need for the co-operation of and detailed research work by biologists, economists and geographers to make such a vast co-ordinated research project really deeply meaningful.

The project itself: it started in 1966, one year after the establishment of the University of Malawi. It combines fundamental or pure research with applied research. It studies the life forms of Lake Chilwa, from micro-organisms to fish. It wants to explore the relationships between fishing and farming; to study the lake and the plains around it; to analyse the economics of farming around the lake area, and to help in the control of the red locust. The project aims to delve into the problems and secrets of lake and plain, to solve and unveil them in order to be useful to the people living around Lake Chilwa. The lives of the people, fishing and farming communities, will be taken into account, not least as they are affected by the periodic drying-up of the lake.

It is with this drying-up and recovery of Lake Chilwa, and how it affects the research, that Douglas Lamb takes up his discussion with Dr. Peter Mwanza, Senior Lecturer in Biology at the University of Malawi.

LAMB:

Before the project began, something was already known of the cyclical variations in the water level

LAMB:

of the lake. However, in 1968 an event occurred which had great interest for research workers in all fields of enquiry. This was the complete recession or drying up of the lake followed by a complete recovery in 1969. What was the emphasis of research before the lake dried up, and has there been any change since its recovery?

MWANZA:

Yes, perhaps to answer that question I had better start with some background facts about Lake Chilwa. You see Lake Chilwa is a very highly productive lake and it is one of the very unique lakes in the world. It's placed in an enclosed basin, that is, there is no outlet to the sea, therefore it is brackish, that is its concentration of salt is higher than a fresh water lake like Lake Malawi. As a result of this the production of fish is very high indeed. Now just to give you some indication, in 1965 the lake produced about ten thousand tons of fish, this is about forty per cent of all the fish produced in Malawi. So you can see that although this lake is very small it is very important indeed, and this is one of the reasons why the University studies decided to do some work on this kind of lake.

Now when the research began in 1966 this was just at the beginning of what we now call the decline phase. We had already in fact, as you have indicated in the question, known that the lake does go through periodic fluctuations of drying and wetting. Now in 1966 this lake was full, but it was at the beginning of the decline phase and we carried on this research until the end of 1967 when the lake was in fact going down and down. In 1968, this was the time when the lake completely dried up. Now the emphasis of work at this time from 1966 to the time when it

MWANZA:

dried up was mainly on productivity in terms of the primary production, this is the production by the green algae in the lake which are the organisms capable of fixing the energy from the sun and then this is transferred to the other organisms and finally to fish and, of course, finally this is transferred to man. Now in 1968 of course, this had to come to a stop because there was no water and there were no organisms to terminate these production studies. But after the heavy rains in 1968 - 9 the lake fully recovered, and one of the most important phases that we went into immediately after this was to put fish back into the lake. Now just before the lake dried up the few officers in our group took some of the fish out of Lake Chilwa and kept these in dams, so the activity after the recovery of the lake was in fact the restocking of the lake with fish, because without fish, this lake would not be as important as it is now. I am pleased to say that this was a success, about half a million fish were put in the lake, and the fishing started that year, and I think it's mainly due to that effort that now Lake Chilwa is back to normal; the fishing is, in fact, quite back to normal and perhaps better than before we started.

COSMO PIETERSE:

Talking about the Lake Chilwa Co-ordinated Research Project, Dr. Peter Mwanza, Senior Lecturer in Biology, University of Malawi, and Douglas Lamb. The drying up of Lake Chilwa helped researchers in clarifying some aspects of ecological and economic processes, and as biologists and economists saw more clearly the links between Lake Chilwa's life forms, and the lives of fishermen and farmers, they could subsequently make useful predictions and suggestions. Another translation of research into active relevance may lie

COSMO PIETERSE:

in teaching, and Douglas Lamb next asked Dr. Mwanza about the effect of the Chilwa research on University teaching:

MWANZA:

Now I'm going to centre myself here purely in biology where I am myself, and where most of the research is done. First of all we have from time to time taken students to participate in this research, and I think that this is a great technique in modern teaching for students to get to know how knowledge is derived and so on. We have taken students to the Lake, they have taken part in looking at fish, weighing it and finding out the breeding period and so on and so forth. The other way is that we have used materials from Lake Chilwa, and this is very important for the students. You see students tend to confine themselves in small circles and think that most of the materials we teach with are from abroad, from the sea, and so on. But when they are told that this material is from Lake Chilwa, our Lake here, it has quite a different impact on them. So we do use materials from the Lake for teaching purposes, algae, fish and so on, even water, we analyse the chemistry and the physics of the water. Now this is one way that the University teaching has benefitted. The other way is that we have encouraged the students who are going to become teachers to become aware of the research going on at Lake Chilwa, and we have in this case attracted students from

College, which is a Teacher Training College, to come and see what is going on. And lately we have been getting students coming to us to ask for pictures, for material, from Lake Chilwa, which they can use in their practical teaching, and I think that this is directly relevant to the teaching and that the University is, in fact, already deriving benefits from this research.

LAMB: Teaching and research programmes in many Universities in under-developed countries are from time to time, and I think they are often justifiably, under fire for lack of relevance. Could you enlarge upon the connection of the Lake Chilwa research activity to the Malawi economy and society in general?

MWANZA: Yes, the point here is that we have a University which normally is known as a place where people do fundamental research, and usually the community around tends to regard University as doing things which are, in fact, not applicable to their every-day problems. Well we thought that this must change now and that the University can be quite relevant immediately, and most of this work is applied and is directly applicable to what people need and so on. For example by discovering the breeding period of a fish you can tell the people what time not to fish actively, and what kind of net to use and so on, so that every time the people fish they are fishing the right size of fish, and leaving out the smaller ones which will in time become bigger. Now this is knowledge which is directly applicable to the fishermen. You can see that this is the main emphasis on most of the research and we are trying to discover, for example, what kind of life the people around Lake Chilwa are living, how they are going to be affected by the economics of Lake Chilwa and so on, fishing, marketing and so on. Well, by understanding their pattern of living you can in fact modify, find out some of the solutions which could be useful to them, and this is the way we think that the research in a developing country should be. Admittedly you cannot stop a University from doing pure research, but this research actually in Chilwa we think is very relevant.

LAMB: To conclude then Dr. Mwanza, could you summarize briefly what you think are the achievements of the Lake Chilwa project so far, and tell us of any major plans being formulated for future research work.

MWANZA: Well it is rather difficult to really talk of achievements because it is one thing to talk about what research is going on, but to talk of achievement as a result of research is something which actually becomes abstract a bit. But perhaps I will just repeat some of the things which I have already mentioned, that some of the achievements which the project can be proud of is that it has acquired knowledge about the lake, we definitely know now that probably there is a cyclical pattern of drying, and that one can at a stage in the drying-up process do something like move the fish out and stock them in some place, and then after the Lake has recovered put back the fish. Now this does facilitate or expedite the reconilization process of the fish in the Lake. Left to itself the Lake will take up to five years to recover. Now this is one thing which I think has been an achievement which is direct, and felt by the fishermen. Now the other achievement I would say is that it has provided us, now we are being modest, provided us with some further problems to look into, so that we can plan out, we have known what mistakes we have made, we have known what successes we also have made, and from this we can plan out future work as to what must be the emphasis of research. One of the things that we're thinking about now is to continue this multi-disciplinary nature of the research, and we are, in fact, intending to expand the scope of the research and we want to call it now environmental studies instead of just centred on Lake Chilwa. Lake Chilwa certainly will still be the centre of research, but environmental studies, which have become very prominent lately due to the alarm that nature has got from pollution, and we want to therefore broaden this research into environmental studies to include

MWANZA: even more fields. The geography people must come in in a much stronger way, sociologists must come in, industrialists, biologists, chemists and physicists must come in in various aspects and be able to tackle their unit's kind of problem, although all will be of a multidisciplinary nature and be able to use it as a model which can be used to further investigations elsewhere.

COSMO PIETERSE: Dr. Peter Mwanza, Department of Biology, University of Malawi, talking to Douglas Lamm. And that's all for **this** week. But next week adult literacy work in Sierra Leone and from Lesotho time span photographic analysis **in the** struggle against soil erosion. In a fortnight, astrophysics and gamma-ray study in Zambia and nutrition, population and land use in Ghana.