A candid chat with Professor Nils Kautsky

by Melckezedeck Osore

"We must keep in mind that policy makers and managers know about money, and maybe socio-economics, but little about natural science research. Therefore I favour an ecological/economic approach, which makes it easier to communicate research findings to policy makers."

I had an opportunity to interview the Professor sometime back during one of his working visits to the Western Indian Ocean (WIO) region. Over the past few years, Prof Kautsky has put much effort to improve the marine and coastal research in this region by participating in various programmes and projects. So I first asked him to describe his general perspective of the WIO region in terms of the future of marine and coastal research.

- Currently, there is a lot of knowledge on marine issues in the WIO region, but one area that is yet to be developed is aquaculture. The development of aquaculture in the region can still be done and there are opportunities to do it wisely because Africa can learn from the mistakes made in Asia and other countries. There are already well-established research links between the North and South. What should now be encouraged is the development of more inter-linkages with Asian countries.

Large research capacity
I wanted to know whether researchers in the WIO region have now ascended beyond the developing status and gained ability to do independent research. Prof Kautsky said that there is now a relatively large capacity for research in the region and this has been the result of the capacity building focus of previous donors.

- This can clearly be seen in the rapidly increasing number of publications from the region in international journals, and the high quality presentations at the WIOMSA symposia. Now the challenge is to engage the researchers in applied research, which is why we have the Marine Science for Management (MASMA) Programme,

Nils Kautsky is Professor of Marine Ecotoxicology at the Department of Systems Ecology, Stockholm University and Deputy Director of the Beijer Institute of Ecological Economics of the Royal Swedish Academy of Sciences. He has more than 20 years of experience in managing coastal projects in the tropics. He is Senior Scientific Adviser of the International Foundation for Science. He is also part of the current WIOMSA/COMREC (Coastal Management Research Centre) cooperation and a Programme Committee member of the Marine Science for Management (MASMA) Programme, which is implemented by WIOMSA and COMREC.
which encourages multidisciplinary research for management and is a way of utilizing the manpower.

Encourage multidisciplinarity
I also wanted to know the Professor's point of view on the following issues: what is the present status of collaborative research among the scientists themselves in the region? What are the main drawbacks or bottlenecks that are restricting the development of marine research in the countries of this region?
- The status of collaborative research in the region needs to be improved, he said. This is why we have the MASMA programme which encourages applications from different countries and at least two countries should be involved to study questions of general interest for the region.
- Professor Kautsky explains that another draw back or bottleneck, is the general lack of definition of the problems facing the region.
- The problems are so loosely defined that there is no good consensus on what to do in terms of research and at times there is a lack of prioritization. There is also still a lack of competence in certain fields. But most importantly, I feel that multidisciplinary research should be encouraged, also involving social scientists.
- Nevertheless, the Professor emphasized that the young marine and coastal researchers in this region have made an impact over the last decade or so. This is evident from the increased number of new MSc and PhD degrees that have been completed recently.

Success stories sell best
What does he propose to be the best way for researchers to get through to the managers and policy makers to ensure that their findings are incorporated in policy issues?
- The best approach is for researchers to provide good examples of successes and failures of proposed development plans. The ecologists must work together with social scientists and economists to try to put a monetary and social value to the benefits accrued from the conservation of different ecosystems. We must keep in mind that policy makers and managers know about money, and maybe socio-economics, but little about natural science research. Therefore I favour an ecological/economic approach, which makes it easier to communicate research findings to policy makers.

Do not repeat mistakes
I asked Prof Kautsky how he would compare and contrast research and effective inputs into policy making in the WIO region and other parts of the world in which he has worked, e.g. Europe, and South East Asia.
- He said it is not easy to make generalizations - it depends on how big the issue is and what the views of scientists are, and he ends the interview saying:
  - The WIO region has a great potential. You are rich in still unexploited natural resources that can be managed wisely for the future development of the region. My advice would be: Learn by mistakes made in other regions - do not repeat them!

People and pollution - Ecotoxicology in Western Indian Ocean

DDT in mothers' milk and people poisoned by contaminated fish - there is certainly a need for ecotoxicological research in the Western Indian Ocean region. Therefore, WIOMSA supported a planning workshop in Zanzibar in February 2005, where international ecotoxicologists met and discussed future research.

Land-, air- and water-pollution is a widespread serious environmental problem, and the Western Indian Ocean region is no exception. After listening to Prof Henrik Kyhlin from the Swedish University of Agricultural Sciences, SLU, it also became obvious that pollution is a global problem which everyone has to take responsibility for - the fact that DDT and PCB, never used in the Arctic, still can be found there in very high concentrations, is startling.

Unbounded issue
Another proof for ecotoxicology being an unbounded issue is what many of the participants pointed out during the workshop: that even landlocked countries, such as Swaziland, contribute to the marine pollution, rivers flowing from one country to another.

Good data crucial
As Prof Henrik Kyhlin also pointed out: to be able to have any influence in the
region in international meetings concerning ecotoxicology, it is crucial to have good data, which developing countries seldom have. Without good and reliable data, sadly enough, the surrounding world might not take any notice about the pollution in Africa, until that day comes, when DDT-residues are found in exports, and no one will buy the products.

Humans are part of the system

"Humans are part of the system – everything we do effects the environment", said Dr Michael Tedengren from Stockholm University in Sweden, and Prof Henk Bouwman from the North-West University in South Africa told the audience that high levels of DDT have been found in mother's milk in the region. In Madagascar, people have been poisoned when consuming contaminated fish.

Since humans are part of the system and everything we do effects the environment, it is important to design the project together with social scientists and to involve them as soon as possible. Incorporation of social science is an important tool to get a broader picture of the problem, and also a help to reach the local people and stakeholders.

Prof Shem Wandiga from the University of Nairobi brought up one example of the importance of involving social sciences - the need of providing rural areas with sanitary systems. But if people do not use them, due to cultural issues, all the technological efforts will be in vain.

Expertise in the region

It is also important to stress, just like Prof Nils Kautsky from Stockholm university in Sweden did, that it is the African researchers who are the experts in this region. They have the knowledge about the area, the contacts, the cultural insight, and know what problems that should be addressed and how, and hence should be the ones who take on the leadership in future ecotoxicological regional research.

Twenty participants from eight different countries met at the Regional Workshop on Ecotoxicological Monitoring and Control in the West Indian Ocean Coastal Marine Environment in Zanzibar, February 14-16 2005. The workshop resulted in two proposals for WIOMSA's research programme MASMA (Marine Science for Management). WIOMSA financed the workshop.

Even landlocked countries contributes to the pollution of the Western Indian Ocean. Dr Yogeshkumar Naik from Zimbabwe shared his experience of ecotoxicological research methods with the participants of the workshop.

Apply for money for demonstration projects

The WIO-lab advertises grants for demonstration projects in the Western Indian Ocean region. Deadline 31st of July 2005.

The project "Addressing Land-based Activities in the Western Indian Ocean" (shortly referred to as the "WIO-LaB project") advertises a call for proposals for demonstration projects.

The WIO-LaB project focuses on addressing major land-based activities in the region and represents a strong partnership between the participating countries (Kenya, Tanzania, Mozambique, South Africa, Madagascar, Seychelles, Comoros and Mauritius), the Norwegian government, United Nations Environment Programme (UNEP) and the Global Environment Facility (GEF). The project is designed to serve as demonstration project for the Global Programme of Action (GPA).

Read the Invitation for pre-qualification (in English and French) and the Conditions and Guidelines on WIOMSA's website: www.wiomsa.org
The time for members of WIOMSA to exercise their democratic right and vote for their Board of Trustee's members has come. 2005 is an election year for the new Board of Trustees. Every member of the Association has the right to vote in the elections for the members of the Board of Trustees

Election of members of WIOMSA Board of Trustees

Ballot papers, listing the candidates in each category, have been distributed by post to all WIOMSA members. Original ballot papers should be returned duly completed to the Secretariat by the 31 August 2005. The returned ballot papers will be anonymous. The New Board will be announced at the WIOMSA General Assembly, which will take place in Mauritius during the Fourth WIOMSA Scientific Symposium in September 2005.

Please inform the WIOMSA secretariat if you have not received your ballot paper

ELECTION TIMETABLE

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<td>Nomination of candidates for the Board of Trustee by WIOMSA members</td>
<td>December 2004 - 28 February 2005</td>
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<td>Nominees confirming their intentions to stand and provide their brief resumes</td>
<td>31 March 2005</td>
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<td>Distributing information on final list of nominees through Newsbrief and website</td>
<td>April 2005</td>
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<td>Distribution of the ballot papers</td>
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The Fourth WIOMSA Scientific Symposium

Advances in Marine Science in Western Indian Ocean Region: Contribution of Research in Improving Human Welfare and Poverty Alleviation

- The response to the call for submission of abstracts has been very encouraging, says Dr Julius Francis, Executive Secretary of WIOMSA. We have received more than 250 abstracts from experts within and outside the region. 112 abstracts have been accepted for oral presentations and 138 for poster presentations. The oral presentations have been categorized into nine themes: "Social Dynamics in Coastal and Marine Environments", "Ecosystem Processes and Functioning", "Physical and Geological Processes and Modelling", "Pollution: Source, Fate and Social and Environmental Impacts", "Management Systems, Governance Frameworks and Participatory Processes", "Endangered Species: Marine Mammals and Turtles", "Marine Resources Utilization Including Fisheries", "Mariculture" and "Coral Reefs: Ecology, Fisheries, Impacts and Restoration". All the accepted abstracts are posted on WIOMSA's website.

The Symposium will take place from the 30th of August to the 1st of September 2005 at the Grand Baie Conference Centre, Grand Baie, Mauritius. It will be preceded by the Mauritius National Ocean Science Forum (NOSF) to be held on the 29th August 2005 at the same venue. The Third WIOMSA General Assembly will take place after the Symposium, on the 2nd of September 2005. Field trips to different sites of interests have been organized for the 3rd of September 2005.

Read more about the Symposium and register on WIOMSA's website: www.wiomsa.org.
MASMA project in Kenya uses advanced microscope for studies of fish larvae

Increment data tells about hatching dates and spawning periods for fish larvae.

A Marine Science for Management (MASMA) project studying fish larval settlement rates and duration of spawning periods in Kenyan reefs recently acquired an inverted research microscope. The microscope (Leica DM IRB, with Leica digital camera and Leica’s advanced image analyses program IM 500 and a computer system) is hosted at the Kenya Marine and Fisheries Research Institute. This equipment is partly sponsored by the LEICA Company.

Counting increment rings
The project is using the equipment to count daily increment rings in otoliths (small calcareous plates that are part of the fish’ balancing organ) dissected out from fish larvae (newly hatched 3 to 4 mm long larvae) to juveniles (<5cm) caught in plankton tows and light-traps. The increment data will tell at what date a particular larva was hatched. The start and the end of the spawning period of each species can then be estimated since larva are caught all year round. The light-traps have been fabricated at KMFRI to catch pre-settlement fish larvae and proved very successful.

Lack of data on larval supply
Fish recruitment variability and larval supply have an effect on community structure, yield of stocks and function of marine parks. So far, little is known about the rates at which fish settle from the plankton and hence the extent to which fish stocks may be limited by larval settlement, but through this project, the researchers hope to gather valuable information about these phenomena.

Training of technicians
Members of the MASMA project, run by scientists from Moi University, KMFRI and the Institute of Marine Research (Swedish Board of Fisheries), have trained technicians at KMFRI on the use of the microscope equipment and to perform otolith analyses.

Members of this project will also be able to provide training for other researchers in East Africa who plan to use similar equipment and otolith data from larval and juvenile fish in their research.

This MASMA project (Larval settlement rates and reef fish recruitment dynamics in coastal Kenya) was briefly presented in the WIOMSA Newbrief of March 2005.

For more information, please, contact:
Dr Boaz Kaunda-Arara (b.kaunda@yahoo.com)
Dr Vidar Øresland (vidar.oresland@fiskeriverket.se)

The light-traps constructed at Kenya Marine and Fisheries Research Institute are used for catching fish larvae and juveniles.

Demonstration of the microscope and digital image system at KMFRI in April 2005. From the left: Rashid Anam (Technician KMFRI), Boaz Kaunda-Arara (Principal investigator), Johnson Kazungu (Director KMFRI) and Vidar Øresland (Principal investigator).

An unpolished otolith with clear outer daily increment rings. The inner rings will be seen after polishing. This otolith came from a 62 day old larva. The otolith diameter is 0.15 mm.

Caranx pappensis juvenile. The researchers will produce identification manuals of fish larvae, juveniles and other marine organisms.
In an ideal world, everyone would share in safeguarding our environment, including the oceans. However, in practice only a few "green" organizations, individuals and governments play this role. How should we get the general public interested in and aware of the environment?

Information SANCOR's Currency

After eleven years of democracy, some of South Africa's successes have been the Environment Bill, following from this the new fishing policy and the National Biodiversity Act. However, governmental departments and Non-governmental Organizations (NGO's) often have to work under constraints and, as a result, their potential is restricted. Thus many processes such as the development of the new fishing policy would not have been as publicized and transparent without the networking and information sharing provided by organizations like the South African Network for Coastal and Oceanic Research (SANCOR).

Network of thousands

SANCOR was formed as a Committee of the CSIR (Council for Scientific and Industrial Research) in the 1960s and is now a non-statutory body constituted by the marine and coastal science community in South Africa. SANCOR's strength lies in knowledge and information generation and dissemination. Since its transformation into its present form in the early 1990s, SANCOR has established a network of over 1000 individuals in academia, public service, parastatals, NGOs and the private sector in Southern Africa. It has also been very successful in redistributing scientific endeavour to the regions of South Africa which historically and traditionally have not received adequate coverage.

One of SANCOR's strengths has been capacity building and it has succeeded by increasing the diversity of the participants in marine science research. SANCOR is now positioned, approximately ten years after its transformation, to realise its investment in achieving its goals. These goals are:

- to co-ordinate, facilitate, stimulate and review marine science, engineering and technology in Southern Africa
- to provide information, advice and training in support of optimal and sustainable use and development of our sea, coasts and estuaries
- to facilitate strategic partnerships and knowledge networks (in and around South Africa)
- to advise on research priorities that will contribute to policy development

SANCOR's Sea & Coast Programme

Since 1993 SANCOR has been funded by the Joint Venture Agreement between the National Research Foundation (NRF) of the Department of Science & Technology and Marine and Coastal Management (MCM) of the Department of Environment and Tourism. These governmental departments along with the SANCOR community embarked on the development of a new programme aimed at promoting the wise use of marine and coastal resources through appropriate marine science, engineering and technology. It was designed to stimulate appropriate inter-disciplinary and inter-institutional activities and was expected to make meaningful contributions to national and regional economies.

This has been, and will continue to be, achieved by enhancing the information support available for decision makers in the public and private sectors.

The Programme was developed as four separate but interacting thrusts and was allocated a period of five years with guaranteed funding. The Sea & Coast Programme Phase I, as it was called, ended in 2000, when it was favourably reviewed by an international panel.

Recognizing the changing needs of the nation and considering the experiences of the successful Programme, Phase II was initiated early in 1999. The new programme had a broader scope than the previous programme, while retaining its successful elements. The programme encompasses applied and fundamental research and can be characterized by a multi-disciplinary problem-solving approach.

VISION OF SANCOR

SANCOR's strategic vision is to coordinate marine research, to strive for excellence, and to continue to cultivate and nurture the collaborative spirit that is a strength of marine science in all of Southern Africa. SANCOR's success lies in the active and dedicated role the Southern African marine science community play in developing SANCOR's initiatives, thereby realizing SANCOR's vision.
More than research
SANCOR and the Sea & Coast Programmes have achieved more than research products. They continue to diversify participation in marine science and provide new participants access to constructive review and an opportunity to compete across the country for funding, an exercise in itself that develops scientific thought and cutting-edge research. The Sea & Coast Programme offers opportunities to retain and to forge new international links and hence to ensure that internationally recognized standards and perspectives are maintained. The Programme also responds to South Africa’s peculiar geographical, socio-economic and political position. In a developing and emerging Africa, SANCOR and the Sea & Coast Programme provide opportunities to contribute to new regional programmes such as the Benguela Current Large Marine Ecosystem Programme on the west coast and the South West Indian Ocean Fisheries Programme on the east coast.

SANCOR Co-ordinating Groups
SANCOR has also established several co-ordinating groups such as the linefish group, thermarine educator’s network and the estuarine consortium. Over the years SANCOR has managed to consolidate expertise in specialised fields of marine research by optimizing the use of financial, technical and logistical resources. This has helped to identify research gaps in marine science and provided ways to address these gaps and stimulate new and exciting research.

On the educational front, SANCOR’s marine educator’s network has provided a forum to bridge the gap between educators and researchers. This has allowed for researchers to publish their findings via the SANCOR newsletter and website (www.botany.uwc.ac.za/sancor) and translate research outcomes to the public, helping dispel misplaced stereotypes of scientists and their research. The network has helped transfer new ideas and findings about conservation and sustainable use of the oceans to the public.

WHO CAN JOIN SANCOR?
Anyone involved in or interested in marine science, conservation, or education at any level. SANCOR provides free membership to students and for a small fee to individuals and institutions. Membership forms are available from the SANCOR secretariat:
Ms Pavitrav (Pavs) Pillay
ppillay@deat.gov.za

Managing Marine Protected Areas - A toolkit for the Western Indian Ocean - get your own CD-ROM!

The toolkit aims at assisting practitioners and managers of Marine Protected Areas in their day-to-day operations and contains, among other things, information about site selection, planning, daily management, sustainable financing, management effectiveness, monitoring and evaluation.

Send an e-mail with your address to WIOMSA for your own free copy:
secretary@wiomsa.org

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- Compound microscope from small laboratory microscopes to big research microscopes and microscope systems (The old brand name was “LEITZ”)
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- Digital cameras. Imaging and archiving software
- Image analyses software
- Specimen preparation equipment like: microtomes, cryostats, staining equipment, cover slippers etc.

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