Training in Fisheries Planning and Management: The Case of the Southern African Development Community Nations

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Abstract

This paper presents an evaluation of the 15-week course on Training in Fisheries Planning and Management being offered at the University of Namibia since 1991. The course includes instruction in fisheries technology, fisheries biology, fisheries law and law of the sea, fisheries economics, fisheries sociology, environmental impact assessment, planning and management, the logical framework approach to planning and computer literacy. The participants in the course have rated the various elements in a range of 2.9 to 4.7 out of a maximum of 5 points.

Introduction

It is becoming increasingly necessary to find appropriate training for fisheries planners, resource managers and policymakers concerned with sustainable fisheries management in the Southern African Development Community (SADC) nations and other tropical developing tropical countries (UNESCO 1980, 1981, 1987, 1988; Cruz and Pauly 1988; SADC 1991). Since 1991, a 15-week course on Training in Fisheries Planning and Management has been given at the University of Namibia. Findings and evaluations on the course are presented in this paper to contribute to the debate on the relevance of fisheries training for sustainable development in Africa and other tropical countries, especially among states with shared stocks. The extent to which the integration of often unrelated disciplines has been successful can also be observed.

Background

In SADC nations, as in other developing countries, fisheries have been affected by changes caused by the so-called "blue revolution" whereby new and improved fishing technologies and efficient production strategies have affected the livelihood of fishers (Bailey 1985) and the fishing industry in general. As a result, resource distribution and equity between low-input small-scale, and capital intensive large-scale fishing communities have sometimes been compromised. This has led to a commonly observed phenomenon called the "zero sum game" whereby technological advantages enjoyed by certain individuals or groups have had a negative impact on the catch and incomes of disadvantaged groups, particularly in the nearshore fisheries (World Bank 1992). In some countries, these developments have affected fisheries organizations. New and innovative approaches to fisheries development are needed especially in the field of education.

Fisheries are a vital resource in many SADC countries, contributing directly to the employment of about 200 000 people. For many poor communities, fish is also the most affordable source of animal protein. The per capita supply of fish ranges from 0.10 kg in Lesotho to 484 kg per year in Namibia (Seki and Bonzon 1993; Stuttaford 1996). SADC's total fish production of about 1.8-2.0 million tonnes is largely artisanal rather than commercial (except for Namibia and South Africa). In Namibia alone, fisheries contribute 3.9-7.6% of GDP. In 1996, for example, 785 075 tonnes were produced valued at over US$1.4 million.

There is a visible lack of training programs specifically dealing with the fisheries sector considering how important fish and fishing are in a society. A regional consultation on fisheries education showed that there was a need for an integrated multidisciplinary and broad-based fisheries training program for senior fisheries administrators, which could be based in Namibia (the SADC coordinating country for marine fisheries management) and focusing on experiences from the region itself. Training would be cost-effective and would serve as a forum for discussions of common issues.

A regional approach was deemed most appropriate. Conservation and management, socioeconomic analysis, institutional change, education and training, and consumer health protection were considered to be public sector responsibilities (World Bank 1992) and were therefore to be included as training topics.

A UNESCO/ICLARM questionnaire on how to improve fisheries training and education in the field of marine sciences (Cruz and Pauly 1988) showed that the importance of marine biology, including taxonomy and ecology, would probably decline in the future as aquaculture, resource assessment and management, computer applications, remote sensing (including GIS), environmental impact assessment and monitoring and an ecosystem approach became increasingly significant.

A curriculum for the fisheries planning and management course was designed at the University of Namibia in partnership with the Norwegian College of Fishery Science of the University of Trϕmso taking into account new developments in the fisheries sector. The Training in Fisheries Planning and Management course has been integrated into the University of Namibia course selection since 1991. It is considered to be in line with the mission statement of the University: "To be a centre of higher learning and to train specialists in all areas necessary for national development."

Course Content

In designing the course, it was recognized that the curriculum had to be flexible enough to respond to the needs of SADC nations. Instruction was offered in fisheries technology (commercial and artisanal); fisheries biology and ecology; fisheries law and law of the sea; fisheries economics; fisheries sociology; environmental impact assessment; planning and management; and the logical framework approach to planning. Since 1994, computer literacy has been included by popular demand because of the need to be up to date on modern computer usage.

The duration of the course has been maintained at 15 weeks. A full description of the subject contents can be found in Marine Fisheries and Resources Newsletter (Vol. 1, No. 1, August 1995) and in various annual course brochures.

Participant Evaluation

The training program has drawn participants from a range of disciplines including law enforcement, veterinary science, quality control, economics, sociology, biological sciences, planning and administration (Table 1).

The course managers obtained considerable feedback on the course from the questionnaire given to participants.

Table 1. Characteristics and regional distribution of participants to the SADC Fisheries Planning and Management Course, 1994-1996.

Country	Highest Qual.	Experience (Years)	Specialization	Sex	Number
Zimbabwe, 1995	B.Sc.	7	Aquaculture Extension	M	1
	M.Sc.	10	Fisheries Biology	M	1
1996	M.Sc.	5	Aquaculture Extension	M	1
Malawi, 1995	B.Sc.	2	Fisheries Extension	F	1
	M.Sc.	3	Fisheries Biology	M	1
1996	B.Sc.	3	Fisheries Biology	M	1
	M.Sc.	5	Socioeconomics	F	1
Tanzania, 1994	B.Sc.	15	Fisheries Biology	M	1
	M.Sc.	10	Fisheries Biology	F	1
	Dip.	14	Fisheries Technology	M	2
1995	Dip.	19	Fisheries Technology	M	1
	B.Sc.	14	Fisheries Biology	M	1
	MBA	25	Planning	M	1
	M.Sc.	10	Natural Resources	F	1
1996	Dip.	24	Fisheries Technology	M	1
	B.Sc.	10	Fisheries Statistics	F	1
Namibia, 1994	Dip.	2-3	Fisheries Technology	M	2
1995	B.A.	3	Economics	M	1
	B.Sc.	2	Fisheries Biology	M	1
	LLB	2	Laws	M	1
1996	B.Sc.	3	Laboratory Technology	F	1
	BA.	2	Economics	M	1
Mauritius, 1996	M.Sc.	6½	Fisheries Biology	M	1
Zambia, 1995	B.A.	3	Economics	M	1
1996	B.Sc.	3	Fisheries Statistics	M	1
	MA	3	Economics	M	1
Mozambique, 1994	Dip.	14	Economics	M	1
	B.Sc. (vet)	9	Veterinary Science	F	1
	B.Sc.	3	Fisheries Biology	M	1
1995	B.A.	3	History (Anthropology)	M	1
	B.Sc. (vet)	4	Veterinary Science	M	1
	B.Sc.	2	Fisheries Biology	M	1
1996	B.Sc. (vet)	3	Veterinary Science	M	1
	B.A.	6	Political Science/Admin.	M	1
Angola, 1994	B.A.	13	Public Administration	M	1
	B.Sc.	7	Fisheries Biology	F	1
	B.Sc.	6	Fisheries Biology	F	1
1996	LLB	10	Fisheries Law	M	1
	LLB	13	Fisheries Law	M	1

They were asked to comment on various aspects of the course ranging from theory, the range of topics, relevance and practical applicability, teaching methods and general administration.

Respondents were asked to grade the topics from 1 to 5, ranging from neutral (not applicable) to very good. Results from the 1992, 1994, 1995 and 1996 sessions are shown in Table 2. Scores ranged from 2.9 to 4.7, indicating that this unique course, which is the only one of its nature available in the region, mostly fulfilled the expectations of the participants.

Integration of Subjects

One of the major aims of the course was to provide a unified, fully integrated training program encompassing the whole range of subjects identified above as relevant to the proper management of SADC's fisheries and fishing industries. To what extent this was achieved may be inferred from correlations computed from responses to the relevant questions (Table 3).

It would appear that there was considerable success in integrating some of the courses: fisheries sociology and environmental impact assessment, fisheries biology and fisheries economics, fisheries biology/ecology and fisheries law, environmental impact assessment and fisheries law, planning and management and fisheries law, the logical framework approach and planning and management. Fisheries sociology was the most difficult to integrate with the other subjects as it was negatively correlated with five other subjects.

Table 2. Mean scores of the subjects taught in the fisheries planning and management course, 1992-1996.

Subject	1992	1994	1995	1996
Logical Framework Approach	4.3	4.5	4.1	4.2
Fisheries Sociology	3.7	3.0	2.9	2.9
Fisheries Biology and Ecology	4.0	4.7	3.3	4.0
Fisheries Technology	3.5	4.5	3.4	3.9
Fisheries Economics	4.1	4.7	3.7	4.3
Environmental Impact Assessment	4.3	4.2	4.3	4.3
Fisheries Law	4.0	4.3	3.4	3.9
Planning and Management	4.5	4.6	4.2	4.4
Computer Literacy	N/A	N/A	3.4	3.4

Table 3. Pearson-product moment correlation matrix.

	so	bio	ft	econ	eia	fl	pm	lfa
so-	1.00000							
bio	-.09786	1.00000						
ft	-27159	.29762	1.00000					
econ	-.11011	.66420*	.44507	1.00000				
eia	.55030*	.44586	-.13378	-.10687	1.00000			
fl	.08640	72223*	.21165	.45528	.61198*	1.00000		
pm	-.43861	.45687	.18578	.42746	.15397	.68586*	1.00000	
lfa	-.29051	.21589	.14586	.61075*	-.20377	.31910	.75009*	1.00000

Figures which are shown by * are significant at P<0.05.
Key:

so	Denotes fisheries sociology
bio	Denotes fisheries biology and ecology
ft	Denotes fisheries technology
econ	Denotes fisheries economics
eia	Denotes environmental impact assessment
fl	Denotes fisheries laws
pm	Denotes planning and management
lfa	Denotes logical framework approach

Significant positive correlations among the subjects.
Fisheries sociology with environmental impact assessment.
Fisheries ecology/biology with fisheries economics and fisheries laws.
Fisheries economics with logical framework approach.
Environmental impact assessment with fisheries laws.
Fisheries laws with planning and management.
Planning and management with logical framework approach.

Future Prospects

Although the course may have succeeded in satisfying a knowledge gap in fisheries planning and management in SADC, it has been recognized that more effort needs to be directed towards achieving closer integration among the subjects so that there is greater appreciation of their respective roles in sustainable fisheries development.

Participant and academia have expressed dissatisfaction with the short duration of the course. This will have to be weighed against the time available for participants to attend the course and an analysis of whether application of the ideas taught at the course would indeed improve and lead to better internalization and cost effectiveness if the course were lengthened.

A built-in evaluation mechanism should allow the course to adapt to changing fisheries training needs and assist in defining the nature and content of other courses appropriate for the region. More sustainable means of supporting the course are being explored including the possibility of establishing a scholarship program. This is still under discussion.

Acknowledgments

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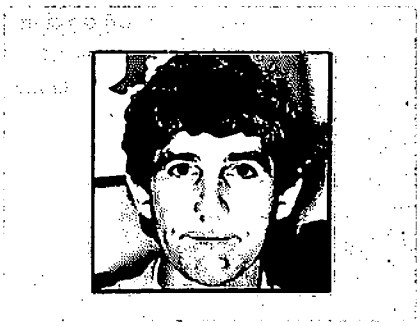
Jay Maclean

Jay joined ICLARM and became the editor of *the ICLARM Newsletter* in 1980. He expanded and enhanced it into a quarterly publication dedicated to the dissemination of scientific research on fisheries, promoting networking among fisheries scientists and providing encouragement and support to scientists from developing countries to publish their research. The Newsletter was renamed *Naga* in January 1986.

Maclean worked as a fisheries scientist in Australia for several years before he moved to editing of work on fisheries and oceanography in 1978. He joined ICLARM in 1980 and was Director of the Information Program from 1980 to 1987. He was Acting Director General of ICLARM from 1988 to 1991, while continuing



his duties as Director of the Information Program, and was back in his original role from 1991 to 1996. During this time he founded the Asian Fisheries Society's journal *Asian Fisheries Science* and was its executive editor for six years. He has authored, co-authored and edited a list of papers on the scientific and information networking aspects of fisheries, as well as compiled bibliographies, proceedings and literature reviews. His versatility also extended to concepts and script for a video presentation on the "Super tilapia", which was said to be the best public awareness product in the history of the Consultative Group on International Agricultural Research (CGIAR) when presented at its annual meeting in 1993.

Jay Maclean was a well-liked and respected figure at ICLARM. We wish him success in his new work as a freelance writer and editor in Manila, and in the pursuit of his many hobbies ranging from music, painting, writing travel stories, to collecting antique books and paintings of fish.