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FISHERY AND AQUACULTURE STATISTICS IN THE FRAMEWORK OF WCA 2010

INTRODUCTION – THE IMPORTANCE OF FISHERIES AND AQUACULTURE

Fisheries and aquaculture have an enormous potential to contribute to world food security, poverty alleviation and to social and economic goals, thus contributing to the fulfilment of the Millennium Development Goals. Fish is an excellent and inexpensive source of protein and, in many countries in Africa, it provides the predominant source of protein. However, because of enormous fishing pressure throughout the world, production from capture fisheries is expected to remain constant, at best, and perhaps to fall in the coming years. Increasingly, production from aquaculture will be expected to fill in the gap arising from decreased production from capture fisheries and increasing population. In many areas, particularly in Asia, this potential is being realized. In Africa, the potential has not been as successfully realized, but there are indications that Africa may be on the verge of a period of rapid development in the aquaculture sector, spurred on by commercial opportunities in the private sector and an increased importance assigned by national governments.

In August of this year, the New Partnership for Africa's Development (NEPAD) – Fish for All Summit concluded with the adoption of the Abuja Declaration on Sustainable Fisheries and Aquaculture in Africa. The Declaration, agreed to at an assembly of high-level government leaders, endorses an Action Plan based on five key areas: supporting capture fisheries, developing aquaculture, improving fish market chains, increasing benefits from fish trade and supporting decision makers with information[1]. In light of the importance being placed on fisheries resources, the need for improved data and information on these sectors is clear.

However, government resources dedicated to data collection efforts in the fisheries sector have generally been reduced or have been slow to develop. The First Session of the Sub-Committee on Aquaculture (Beijing, 2002) of the FAO Committee on Fisheries recommended the incorporation of the collection of aquaculture data into relevant existing national data collection systems (e.g. agricultural census, consumption and labour surveys), in order to use limited financial resources efficiently and to capitalize on existing statistical capacity. The Sub-

[1] WorldFish Center, "African governments unanimously adopt Abuja Declaration on sustainable fisheries, aquaculture." Press release. 25 August 2005.

Committee recognized that training and education in data collection, analysis, storage, management and dissemination are fundamental in securing the availability of good quality data. The World Census of Agriculture provides opportunities for integrating the collection of statistics on fisheries with the collection of agriculture statistics in an efficient and cost-effective manner.

Moreover, the Thirteenth Session of the Committee for Inland Fisheries of Africa[2] reaffirmed the importance of reliable fisheries and aquaculture statistics for the preparation of appropriate policies to alleviate poverty and ensure food security. However, it was noted that, due to limited resources and competing priorities, most countries had experienced a decline in the quality of their statistics. Members were informed of the changes being made in the 2010 Programme of the World Census of Agriculture and expressed hope that efforts could be made to combine the collection of fisheries statistics with other national data collection systems, such as a census of agriculture.

WHY INCLUDE FISHERIES AND AQUACULTURE?

There are several reasons why it makes sense to include the collection of data on aquaculture in the census of agriculture. The nature of the activity is similar, in that both involve the cultivation of organisms – terrestrial for agriculture and aquatic for aquaculture. Many agriculture holdings may also conduct aquaculture activities. For example, land not used for agriculture may be utilized for a fish pond and resources and equipment may be shared between the two activities. In other cases, the activities may be explicitly integrated, such as the farming of fish within rice fields and the use of livestock wastes as an input for aquaculture. Furthermore, as was previously noted, national resources devoted to statistics and data collection efforts are limited and should be utilized as wisely and efficiently as is possible. Combining data collections can provide a means to reach the small-scale aquaculture producers – the most difficult component of the sector from which to estimate the production.

Although agriculture and aquaculture are considered by the ISIC[3] to be separate economic activities, governments and international agencies should make an effort to harmonize fishery statistics with other types of agricultural statistics. At some stage statistical programmes for fisheries should be logically linked to other production systems of food and agriculture statistics, so as to provide a more complete picture of the proportion of animal protein in the food consumption and, in general, of the overall contribution of fisheries in the national economy. The census of agriculture can represent a starting point in this process.

Because of the similar nature of the activities, most of the discussion has centered on including questions about aquaculture in the census of agriculture. However, countries may also want to include one or two simple questions to measure the degree of participation in inland fishery activities. In many countries, this activity is not monitored at all[4] although in some countries it can provide farming families with an important supplement to farm income and food supply.

HOW TO INCLUDE FISHERIES AND AQUACULTURE

The 2010 Programme of the World Census of Agriculture provides several opportunities to include the collection of information concerning aquaculture. The degree to which aquaculture is included by a country will depend on the degree of development of the sector, the resources available and the national priorities. Countries have the opportunity to tailor the WCA to meet their needs. The recommended minimal level is the inclusion of the question on the core questionnaire concerning the presence or absence of aquaculture activities (and/or inland capture fishing) within the agricultural holding. The maximal level of inclusion would be the undertaking of a combined, complete census of agriculture and aquaculture. The different levels of participation are elaborated more fully.

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[2] Report of the Thirteenth Session of the Committee for Inland Fisheries of Africa, Entebbe, Uganda. 2005. ftp://ftp.fao.org/docrep/fao/008/y5919b/y5919b00.pdf

[3] ISIC – International Standard Industrial Classification of All Economic Activities

[4] Generally, marine capture fisheries are better monitored in most countries.

Low level of inclusion (Question on core questionnaire only)

A question on the core questionnaire of the WCA is used to determine the presence or absence of aquaculture activities on the agricultural holding. This can provide information concerning the prevalence of aquaculture in the country. This list of holdings conducting aquaculture could be used subsequently as a sample frame to conduct more detailed surveys on aquaculture production. It is important to note, however, that only agricultural holdings that also have aquaculture will be identified by this approach, and that aquaculture-only holdings or households would be missed. This may not be a significant problem if most of the aquaculture in the country is integrated with agriculture activities, but it may present a serious coverage issue if this is not the case. In many cases, the large-scale aquaculture producers may be well known and reachable by a separate data collection effort, so that the issue of coverage can be remedied.

Middle level of inclusion (conduct of the aquaculture module)

Countries interested in more detailed information on aquaculture may choose to undertake the aquaculture module to the World Census of Aquaculture. This module could be conducted at the time of the initial enumeration, to those holdings that give a positive response to the core question on aquaculture, if there is sufficient time. Alternatively, the module could be conducted on a return visit at a later time. Details of the module for aquaculture are given below. This approach will still result in the coverage issue discussed previously, as only agriculture holdings are enumerated and aquaculture activities outside of agriculture holding will not be accounted for.

High level of inclusion (Coordinated census of agriculture and aquaculture)

In order to overcome this issue of the scope of coverage, it is necessary to expand the notion of the "holding". That is, "holding" should be expanded to include economic units which engage in aquaculture (but not necessarily also in agriculture). Chapter 7 of the 2010 Programme of the World Census of Aquaculture provides a framework for the conduct of a joint census of agriculture and aquaculture. Using this approach, aquaculture holdings, agriculture holdings, and mixed holdings would all be included in the sampling universe. In terms of aquaculture data, this implies a large advantage as all aquaculture will be covered giving a complete snapshot of the sector. Obviously, there are cost implications to such an expansion, and it may only be appropriate in countries where production from aquaculture represents a significant portion of the food supply and contributes substantially to GDP.

DETAILS OF THE AQUACULTURE CENSUS

The aquaculture module emphasizes the collection of information on structural elements that are not as susceptible to large inter-year variations as may be production data. Areas for the census, subject to the needs and modification of countries, may include:

- Employment
- Land and water use
- Purpose of production
- Production facilities
- Species cultured, source of the seed, and nature and source of the feed
- Machinery and equipment
- Buildings and structures

Guidelines for the collection of structural information on aquaculture, containing a detailed elaboration of the concepts and definitions, have been produced by FAO[5]. Countries wishing more information are invited to contact the author of this paper concerning this publication. The module certainly can be modified to meet the needs of individual countries.

Generally, data on production volume and value have not been included in the agricultural census because of the focus on structural elements and the presence of better-suited sampling and estimation approaches. However, for aquaculture there may be some advantage in including basic measures of annual production. Because many countries have no system for collecting aquaculture data on a regular basis, the census could provide a better estimate of the annual production than has been available to date. In countries where there is a

[5] Rana, K.J. Guidelines on the collection of structural aquaculture statistics. Supplement to the Programme for the World Census of Agriculture 2000. FAO. Rome, Italy. 1997.

system in place but it is known (or suspected) to be weak or unreliable, production estimates from the census could be used to provide benchmark data for the current aquaculture data systems. Again, the needs and purposes of the country conducting the census would determine what elements should be included.

COORDINATION AND COMMUNICATION

Including the collection of fisheries and aquaculture data in agriculture data collections can help to optimize the limited resources available for data collections and can make more efficient use of the statistical capacity within the country. In many countries, it may be the case that the national statistics office or the agricultural statisticians have more technical experience in statistics and data collection than do officers in the fisheries ministry. Communication among the agencies can help improve this statistical capacity. Communication and coordination is essential at every step of the census process. Officers responsible for fisheries and/or aquaculture should be involved in the design of the relevant sections of the census forms and in the development of procedures for conducting the fisheries-related sections. Results, or raw data, from the core questionnaire should be communicated to the appropriate resource people within the fisheries department. For their part, after results are analyzed they must be communicated back to officials in the agriculture ministry to ensure that the contribution of fisheries and aquaculture is recognized and accounted for by the national government.

CONCLUSIONS AND DISCUSSION

As fisheries and aquaculture are an important source of food and income, the collection of relevant and accurate data on the sector is important for assessing progress towards achieving food security and poverty alleviation. The 2010 Programme of the World Census of Agriculture provides a framework for including the collection of information on this important food-producing sector.

The Commission is invited to consider and comment on the potential for including the collection of basic fisheries and/or aquaculture data within their agricultural data collections and specifically within planned activities carried out under the 2010 World Census of Agriculture. More generally, the Members are invited to share experiences and opportunities for collaboration with colleagues within the fisheries and aquaculture field. Countries wishing more information or advice on the inclusion of fishery data collection within the World Census of Agriculture are cordially invited to contact the author.