

# Guidelines to meet insurance and other risk management needs in developing aquaculture in Asia



**Cover photo:**

Seabass (*Lates calcarifer*) broodstocks mass mortality due to an accident – the outlet water pipe of a concrete broodstock tank was severely damaged after a strong wave hit the farm. Situbondo, East Java, Indonesia. Courtesy of NACA/Sih Yang Sim.

# Guidelines to meet insurance and other risk management needs in developing aquaculture in Asia

by

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# Preparation of this document

This document contains the *Guidelines for action to meet insurance and other risk management needs in developing aquaculture in Asia* (Part 1); the *Report of the Regional Workshop on the Promotion of Aquaculture Insurance in Asia*, which was held in Bali, Indonesia, from 30 April to 2 May 2007, where these guidelines were discussed and finalized (Part 2); and two background papers for the Regional Workshop. The first is a general background paper on aquaculture insurance (Part 3), while the second is on the role of better management practices (BMP) in aquaculture insurance (Part 4).

The preparation of this document was a joint effort by Philip A.D. Secretan, Aquaculture Underwriting Management Services Ltd (AUMS Ltd); Pedro B. Bueno of the Network of Aquaculture Centres in Asia-Pacific (NACA); and Raymon van Anrooy, Fishery Officer for Central Asia; Susana V. Siar, Fishery Industry Officer, Melba Bondad-Reantaso, Fishery Resources Officer (Aquaculture); and Simon Funge-Smith, Aquaculture Officer for Asia and the Pacific, all from the FAO Fisheries and Aquaculture Department; and Ake Olofsson, Rural Finance Officer, Agricultural Support Systems Division. The Regional Workshop and background documentation were funded by the Fisheries and Aquaculture Economics and Policy Division (FIE) of the FAO Fisheries and Aquaculture Department. The Regional Workshop was a collaborative effort of FAO, NACA and the Asia-Pacific Rural and Agricultural Credit Association (APRACA) and their members, and was hosted by the Directorate General for Aquaculture of Indonesia.

# Abstract

With the aim of alleviating poverty, the Food and Agriculture Organization (FAO) of the United Nations and the Network of Aquaculture Centres in Asia-Pacific (NACA) identified a need among governments, non-governmental organizations (NGOs) and donor organizations for insurance and risk management facilities to be made available to developing aquaculture in Asia. In response to this need, a Regional Workshop on the Promotion of Aquaculture Insurance in Asia was held in Bali, Indonesia, from 30 April to 2 May 2007. At the workshop, the proposals for addressing the needs were presented, discussed and finalized as the *Guidelines for action to meet insurance and risk management needs in developing aquaculture in Asia*.

This document has four chapters. Chapter 1 contains the *Guidelines for action to meet insurance and risk management needs in developing aquaculture in Asia*. These Guidelines are an attempt to devise practical ways of reconciling two widely differing aims – that of the insurance sector to make a profit, and that of governments, NGOs and donor organizations to provide altruistic compensation programmes to the less sophisticated and developing sectors of Asian aquaculture. These programmes need to meet social needs in the face of natural and human-induced disasters and other hazards, and must be risk management-led.

The Guidelines recognize that the insurance sector can meet the insurance needs of both small- and large-scale aquaculture enterprises, and being profit-driven, it has an obligation to its shareholders to use its resources to make profits on their behalf. The Regional Workshop endorsed the “hybrid approach” as set out in the Guidelines. This approach includes the establishment of an insurance market facility, formerly called the Asian Aquaculture Insurance Pool (AAIP). The insurance sector, its risk management experts and loss adjusters would provide risk management input and coverage for the risks and perils that they can cover, at rates, terms and conditions that are compatible with their obligations to their shareholders. The hybrid approach also proposes that public bodies use their resources to provide social coverage, but on a basis that is coordinated and compatible with the insurance sector’s approach and that follows its information gathering, inspection and survey, and loss adjusting processes.

Moreover, the hybrid approach proposes ways to reduce administrative and operational costs of providing insurance services to widespread small-scale aquaculture farmers and to decrease and better manage aquaculture-related risks at the farm level. In the Guidelines, it is recognized that the hybrid approach might benefit from the involvement of rural credit and microfinance institutions. By teaming up with or developing partnerships with the insurance sector, these institutions would benefit from the combined knowledge of both, and might address the insurance needs of small-scale aquaculture farmers in a more cost-effective manner. The Guidelines also provide some practical examples on how the aquaculture insurance sector could be enabled to answer to the demands of small-scale farmers.

Chapter 2 contains the *Report of the Regional Workshop on the Promotion of Aquaculture Insurance in Asia*. The Regional Workshop concluded that aquaculture insurance is likely to be attractive to farmers whose aquaculture operations are their principal form of livelihood and where they have invested significant livelihood assets such as time, labour, infrastructure and funds. It was noted that aquaculture insurance schemes in Asia do not currently cover small-scale aquaculture. At present, there is



high uncertainty over the viability of aquaculture insurance in this sector. In this regard, the workshop concluded that the hybrid approach involving partnerships between governments, insurers, and private and public sector organizations, as detailed in the *Guidelines*, would be the most suitable approach for the region to develop schemes accessible to groups or clusters of medium- and small-scale aquaculture producers.

The Regional Workshop encouraged governments in the region to: (i) contribute to the establishment of aquaculture insurance schemes in Asia by providing an enabling environment (legal and policy frameworks) and by considering appropriate social coverage for risks that cannot be covered by the insurance sector; (ii) engage with the insurance industry, other public and private bodies, and clusters/groups of small-scale farmers in the development and implementation of the hybrid approach, which is considered suitable for aquaculture insurance development in support of small-scale aquaculture in the region; (iii) continue to provide an enabling environment for increasing the degree of adoption of Better Management Practices (BMPs) in aquaculture in order to facilitate sustainability and reduce production-related risks; and (iv) work closely with the aquaculture sector in quantifying risks and developing effective mechanisms for their mitigation. The Regional Workshop encouraged the insurance sector<sup>1</sup> to: (i) initiate the establishment of an Asian Aquaculture Insurance Pool (AAIP), which will serve as a market facility for the provision of aquaculture insurance services to the region; (ii) assist in creating awareness and facilitating capacity building for the establishment of mutuals and other insurance schemes. Such schemes would spread the risks related to “smaller” disasters that affect some, but not all, participants in the scheme; and (iii) actively work with governments in seeking ways to apply the hybrid approach to aquaculture insurance that can address the needs of medium- and small-scale aquaculture operations.

Chapter 3 consists of a background paper for the Regional Workshop, Aquaculture insurance, by Philip A.D. Secretan. This paper provides a general introduction to aquaculture insurance for the layman, including, *inter alia*: a description of development constraints and opportunities for aquaculture insurance, with a focus on aquaculture stock insurance; the processes applied in the insurance market in terms of needs and risks assessments, risk management, claim handling procedures, benefits and costs of being insured; suggestions for the development of the aquaculture insurance market; and lessons learned from recent experiences with aquaculture insurance. The background paper also contains in its annexes a glossary of insurance terminology, policy terms and conditions, example proposals and example insurance policy wordings.

Chapter 4, the final part of this document, is dedicated to another background paper prepared for the Regional Workshop, The role of Better Management Practices (BMPs) in aquaculture insurance. The paper was prepared by Pedro B. Bueno, Michael J. Phillips, C.V. Mohan, Arun Padiyar, N.R. Umesh, Koji Yamamoto and Flavio Corsin of NACA. It recognizes that there is a broader range of hazards and risks faced by small aquafarmers and their families than those faced by most agricultural farmers: these hazards and risks impact on lives, assets and livelihoods. The paper notes that risks to farming activities are generally addressed by a combination of approaches, such as mitigation by using BMPs, and risk transfer through financial instruments such as insurance. The paper further shows that BMPs can be a tool to help small and poor aquafarmers acquire the capacity to access financial products. Recognizing that the objective of BMPs is to enable small aquafarmers to produce more and in a sustainable manner, the paper acknowledges that a large part of that capacity comes from

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<sup>1</sup> The sector comprises, among others, direct insurers, reinsurers, brokers, risk management experts and loss adjusters.

knowledge and skills to manage on- and off-farm risks. This capacity improves the chances for a successful crop, which makes the farmer insurance- and credit-worthy. Finally, the paper makes a case for insurance as a tool to encourage farmers to take up BMPs and to get organized so that insurance would truly become a risk management tool and also a part of the total service support system for small farmers.

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# Contents

Preparation of this document	iii
Abstract	iv
Acknowledgements	ix
Acronyms and abbreviations	x
Executive summary	xi
<b>Guidelines for action to meet insurance and other risk management needs in developing aquaculture in Asia</b>	<b>1</b>
1. A role for insurance in developing aquaculture and alleviating poverty in Asia	1
2. Evolution of the aquaculture insurance market	1
3. The benefits of an insurance and a risk management-led approach	3
4. The problem	3
5. Approaches	4
6. The hybrid insurance approach	5
7. Purpose and use of these guidelines	13
8. Conclusion	13
Acknowledgements	13
<b>Report of the Regional Workshop on the Promotion of Aquaculture Insurance in Asia</b>	<b>15</b>
I. Introduction	15
II. Conclusions and recommendations	29
III. Working group reports	31
Annex 1 – List of participants	35
Annex 2 – Workshop programme	43
Annex 3 – Opening speeches	47
<b>Aquaculture insurance</b>	<b>53</b>
Introduction	53
1. Aquaculture insurance industry stakeholders and their roles	53
2. Aquaculture policy types and conditions	56
3. Aquaculture insurance – development constraints and opportunities	57
4. The processes of the insurance market	66
5. Developing the market for aquaculture insurance	74
6. Lessons learned	77
7. Summary of short- and medium-term opportunities	77
8. Acknowledgements	78
<b>Role of better management practices (BMPs) in aquaculture insurance</b>	<b>79</b>
I. Introduction	80
II. Principles to practise: creating capacities of small-scale farmers to access financial products	80

III. BMPs and insurance	86
IV. Servicing systems for small-scale farmers	91
V. Conclusions	93
<b>Annexes</b>	
Annex 1 – Breaking the vicious cycle of poverty through microcredit	95
Annex 2 – Expansion of the BMP for shrimp project, India	97
<b>Appendixes</b>	
Appendix A – Basic insurance policy terms and conditions	99
Appendix B – Example proposal forms	109
Appendix C – Example policy wordings	124
<b>Glossary</b>	<b>145</b>

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We would like to express our gratitude to the institutions and organizations that hosted and contributed to the Regional Workshop: the Network of Aquaculture Centres in Asia-Pacific (NACA); the Asia-Pacific Rural and Agricultural Credit Association (APRACA); the Directorate General for Aquaculture of Indonesia; and FAO. Thanks also go to many members of these institutions, as well as active private entrepreneurs in the aquaculture and insurance sectors, who have attended the workshop and contributed with their knowledge, information and advice to the development and finalization of the guidelines.

The financial contribution to the Regional Workshop and background documentation preparation by the Fisheries and Aquaculture Economics and Policy Division (FIE) of the FAO Fisheries and Aquaculture Department is also acknowledged with appreciation.

# Acronyms and abbreviations

<b>APRACA</b>	Asia Pacific Rural and Agricultural Credit Association
<b>BMPs</b>	Better management practices <sup>1</sup>
<b>CCRF</b>	Code of Conduct for Responsible Fisheries
<b>DoF</b>	Department of Fisheries
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FIE</b>	FAO Fisheries and Aquaculture Economics and Policy Division
<b>FIMA</b>	FAO Aquaculture Management and Conservation Service
<b>FIIT</b>	FAO Fishing Technology Service
<b>GAP</b>	Good aquaculture practice
<b>GDP</b>	Gross domestic product
<b>MFI</b>	Microfinance institution
<b>NACA</b>	Network of Aquaculture Centres in Asia-Pacific
<b>NABARD</b>	National Bank for Agriculture and Rural Development
<b>NGO</b>	Non-governmental organization
<b>UN</b>	United Nations
<b>US\$</b>	United States dollar

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<sup>1</sup> A note on the use of “better” rather than “best” management practices. The Consortium on Shrimp Aquaculture and the Environment, composed of FAO, NACA, the United Nations Environmental Programme (UNEP), the World Bank (WB), and the World Wide Fund for Nature (WWF), have agreed on the use of “better” in the consideration that what is “better” today will become the norm tomorrow. It thus implies that the practice is the best at the present time.

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# Executive summary

The Food and Agriculture Organization of the United Nations (FAO) and the Network of Aquaculture Centres in Asia-Pacific (NACA) recognize the need to support the development and application of insurance and other risk management tools for small- and medium-scale aquaculture farms in Asia as a means to develop the sector and to improve food security in the region. Governments, non-governmental organizations (NGOs), donors and technical assistance agencies, as well as the private sector, each have their specific roles to play in this endeavour. In response to this need, FAO and NACA, in collaboration with the Government of Indonesia, organized a Regional Workshop on the Promotion of Aquaculture Insurance in Asia, held in Bali, Indonesia from 30 April to 2 May 2007. Draft proposals for strategies aiming at addressing the risk in the aquaculture sector were presented and discussed during this workshop. The present document, *Guidelines for action to meet insurance and other risk management needs in developing aquaculture in Asia* presents the strategy that the workshop participants endorsed as the most promising.

These Guidelines are an attempt to devise practical ways of bringing together the insurance sector, which is driven by commercial interests, and governments, NGOs and donor organizations, which are eager to provide altruistic compensation programmes to the less sophisticated and developing sectors of Asian aquaculture in the event of natural and human-induced disasters.

Although the insurance industry has the capacity and ability to meet the insurance needs of both small- and large-scale aquaculture enterprises, its obligation towards its shareholders to use resources in a profitable manner and the high-risk profile of the aquaculture sector cause the industry to exercise a certain caution.

The approach set out in the Guidelines foresees the establishment of an insurance market facility, first called the Asian Aquaculture Insurance Pool (AAIP). It is built around a layered risk management strategy whose core is formed by mutual insurance schemes among well-established groups of fish farmers. It envisages that the insurance sector, with its risk management experts and loss adjusters, would provide coverage for some risks and perils, at rates, terms and conditions that are in line with its obligations towards its shareholders. Further, the approach proposes that the public sector use its resources to provide “social” coverage in a manner that is well-managed, coordinated and compatible with the insurance sector’s interest.

Moreover, the approach proposes ways to reduce administrative and operational costs of providing insurance services to widespread small-scale aquaculture farmers and to decrease and better manage aquaculture-related risks at the farm level. An example is the use of the networks of rural and microfinance institutions for premium collection and indemnity payments.

The approach also suggests that on-farm risk management instruments, i.e. Better Management Practices (BMPs), are crucial and would have to be developed in parallel in order to complement the above-described financially-based risk management mechanism.

How these Guidelines could work is discussed with some practical examples on how the aquaculture insurance sector could be enabled to provide the necessary services.



# Guidelines for action to meet insurance and other risk management needs in developing aquaculture in Asia

## 1. A ROLE FOR INSURANCE IN DEVELOPING AQUACULTURE AND ALLEVIATING POVERTY IN ASIA

Recently, guidelines have been produced for meeting micro-credit and microfinance needs in aquaculture and inland and capture fisheries development in Asia. They were the result of participatory processes involving rural credit and microfinance institutions, aquafarmers, fishers, governments and international development agencies. These guidelines have since contributed to generating productive self-employment by providing access to seed capital to people living in poverty. They have also helped increase participation in society's mainstream economic and political processes.

Aquaculture is increasingly acknowledged as an important sector in rural development, and consequently, more small-scale aquafarmers need to access lines of microcredit and microfinance. While the sector faces similar challenges and difficulties to those of agriculture and fishing, it has its own particularities and differences, because aquaculture is conducted in a water environment that may be open to exceptional and unusual risks and hazards. Insurance and risk management are vitally important inputs to successful, long-term, sustainable aquaculture production, but there are no micro-insurance schemes for small-scale aquafarmers;<sup>1</sup> they are deprived of the benefits of being insured. Credit and insurance share the same goals: the sustainability of the fish farming enterprise, on the one hand, and increased resilience of the fish farming household, on the other.

The Food and Agriculture Organization of the United Nations (FAO), the Asia-Pacific Rural and Agricultural Credit Association (APRACA),<sup>2</sup> the Network of Aquaculture Centres in Asia-Pacific (NACA)<sup>3</sup> and some governments, NGOs and donor organizations aim, *inter alia*, to encourage the provision of insurance to the aquaculture sector, and particularly, to small-scale producers, enabling them to obtain access to this service, which is essential to the sustainable development of the sector. Achieving this requires an understanding of the position of the insurance sector, on the one hand, and of small-scale farmers, governments, NGOs and donor organizations, on the other.

## 2. EVOLUTION OF THE AQUACULTURE INSURANCE MARKET

Aquaculture insurance has been available to advanced subsectors of the aquaculture sector for over 30 years. During this period, an experienced insurance market for this class of insurance has evolved and has developed a wide range of techniques for evaluating and managing aquaculture's risks.

<sup>1</sup> For the purpose of this document, small-scale farms are defined as farms with small-scale operations, typically family-owned, vulnerable, often not formalized into business operations, and generally with a small turnover.

<sup>2</sup> [www.apraca.th.com/index.asp](http://www.apraca.th.com/index.asp)

<sup>3</sup> [www.enaca.org](http://www.enaca.org)



Insurance has largely been limited to producers using sophisticated and generally high-cost management systems and techniques that employ substantial capital expenditure. This is usually provided by banks or raised on stock markets, mainly because the producers concerned are able to buy insurance.

Historically, salmon farming has constituted the area of greatest insurance and risk management activity. Although insurers have widened their activities to cover other species and growing methods, the broadening process has been very slow and cautious. Growth in the insurance of aquaculture has been slow because adverse loss experience is often suffered with each new species, growing system and production area insured.

For commercial reasons, the insurance sector is generally unwilling to provide statistics on the profitability or otherwise of its business. However, there is considerable evidence, anecdotal and empirical, that aquaculture has not been a profitable class for insurers and reinsurers in the past. In addition to well-publicized fish kills,<sup>4</sup> a consistent turnover of participating insurance companies indicates that losses were unsustainable for the insurance companies venturing into the sector. However, a recent FAO study, *Review of the current state of world aquaculture insurance* (Van Anrooy *et al.*, 2006) showed that profitability is improving.

To overcome this adverse claims experience and achieve underwriting profitability, insurers have developed sophisticated underwriting techniques. Their approach is very selective, demanding high standards of management. The extensive application of risk management is mandatory. This risk management-led approach generates substantial underwriting expenses, which, together with large and frequent losses, are reflected in the high premiums that the sector pays for its insurance.

Accordingly, comprehensive underwriting information must be gathered on every production unit proposed for insurance and critically assessed by an underwriter. Insured production units must be regularly inspected, with inspection results often requiring further evaluation by underwriters and the instigation of actions of various types.

The nature of aquaculture also demands that any disease or incident that threatens or actually causes fish to die or be lost has to be individually assessed by insurers, who take a direct interest in seeing that effective mitigating measures are taken. This approach is advantageous to insureds because they benefit considerably from the experience that their insurers gain through solving problems in other areas. As such, it is a significant component of a risk management-led approach to insuring aquaculture.

Insurance processes are thorough and exacting, demanding high skills from the underwriting experts. They also make considerable demands on the insureds. Yet, the pool of experienced underwriters is small, which represents a significant limitation in the ability of insurance markets to take on business. It is a further obstacle for a business that is also time-consuming and difficult to handle.

The need for high skills and extensive experience also extends to the surveyors and loss adjusters who underpin the risk management and loss adjusting processes.

The net effect of all the above factors is the denial of coverage to aquaculture production processes in many parts of Asia, and particularly, the activities of small-scale producers. Many insurers are unwilling to incur high costs and devote scarce resources to a sector that offers no or very limited financial return and that is perceived to require a great deal of effort to handle it.

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<sup>4</sup> Super chill in Eastern Canada and the United States of America in early 2003, approximately US\$12 million; loss of tuna in cages in 1997, approximately Aus\$20 million; and substantial losses in salmon production from various diseases in recent years, value unknown, but many millions of US dollars.

### 3. THE BENEFITS OF AN INSURANCE AND A RISK MANAGEMENT-LED APPROACH

The stringent standards demanded by aquaculture insurance markets, the high costs of meeting them and high underwriting costs work directly against small, individual, household-based, artisanal aquafarmers obtaining insurance; they are too small-scale to generate significant premiums and are viewed as likely to produce high levels of losses that are expensive to adjust and pay.

If this perception could be turned around and small-scale producers organized into groups that could be handled cost-effectively and organized to take up BMPs, a significant step forward would be achieved. Such groups could take shelter in insurance arrangements taken out by their cooperatives or associations, or by specially formed mutual insurance companies. This would lead to economic improvements for insurers and reinsurers, thus widening the opportunities for providing cost-effective insurance arrangements.

The benefits to all parties would be significant. Production efficiencies of the small-scale producers in the sector would be improved, wealth created, poverty alleviated, the pool of aquaculture production that could be profitably underwritten would expand, and the market for general insurance products would grow.

But this cannot happen unless a practical mechanism is created to achieve these goals and make it profitable for insurers to become involved or at least hold out the prospect of profitability over a reasonable time period. It also cannot happen unless such a mechanism delivers benefits to governments, NGOs and donors.

### 4. THE PROBLEM

Unfortunately, the various stakeholders in this situation have generally incompatible and conflicting objectives with different *modus operandi*.

Governments, NGOs and donor organizations want to see risk spreading and compensation, as well as risk management techniques made available to the simplest and most unsophisticated producers. Their approach is altruistic and substantially influenced by social needs. In practice, without the basic organization referred to above, these needs will likely be met through generous compensation processes that insurers could not accept.

Insurers cannot contemplate operating on such a basis. They cannot compromise a strict underwriting approach that is beginning to earn reasonable underwriting profits after many years of losses. It is of no practical concern to them that their approach effectively disenfranchises large numbers of small producers. The same is valid for most credit and microfinance institutions.

There are a number of constraints that affect access to and availability of insurance services for small-scale aquaculture farmers in the Asian region; most of them are set out in the *Review of the current state of world aquaculture insurance*. Small-scale aquafarmers, particularly in Asia, lack understanding of insurance systems in general and the opportunities that they could provide to their businesses. In addition, they have generally limited ability to objectively assess the risks involved in their production processes. Other constraints are that: (i) property insurance may not be available for water-based structures or constructions not classified as “buildings”; (ii) farmer registration and licensing in many countries in Asia are patchy, thus limiting the “contractual” aspects of insurance because the legality of the operation can be contested; (iii) farm record keeping is extremely limited in many farms; (iv) data on risk is limited; (v) and aquatic animal disease surveillance schemes are generally weak.

Small-scale farmers’ are often not able to pay premiums individually. Furthermore, the limited range of products/services that current insurance schemes offer generally causes gaps between the farmers’ needs and the price at which the services are provided. Most of these constraints can be managed if aquafarmers work together in groups,

introduce and apply BMPs, and collaborate with insurers and the government towards a joint solution.

Aquafarmers currently tend to join forces in groups, clusters, organizations and associations generally established in search for profit, knowledge, information and influence. Services/products of mutual insurance companies, specially formed to handle all the insurance needs of groups, will need to be introduced. These companies offer a proven way for small operators to buy insurance. All such organizations and associations can search for appropriate and relevant services for their members in the most cost-effective way.

## 5. APPROACHES

In the light of these constraints, three alternative courses of action have been identified:

- The status quo would be maintained with only large-scale aquaculture enterprises having insurance service access.
- Governments, NGOs and donors, with or without aquaculturist organizations or associations, would adopt their own risk management and compensation programmes to address the needs of the sector.
- Governments, NGOs, donors and aquaculture associations/ organizations would work together with the insurance market in such a way that enables them to meet their respective objectives and satisfy the outcomes each seeks.

Maintaining the *status quo* in Alternative 1 is not desirable, for obvious reasons.

Alternative 2 may appear feasible, perhaps attractive, to the governments and agencies involved. In practice, however, this would mean that they would have to provide a full insurance service. Accordingly, they would have to go through the same learning curve that the insurance sector has undergone over the last 30 years. The costs of learning, implementation and compensation would have to come from their resources. It is an alternative that can accurately be described as “reinventing the wheel”, which is never an attractive option. Nevertheless, in some European and Asian countries, except Japan (including China, India and Turkey), this alternative has been or is being tried with limited success.

Alternative 3 would appear to be the feasible choice due to its potential to meet the different aspirations of the various parties while satisfying their individual requirements and goals.

For the insurance sector, this alternative would mean providing restricted cover – possibly against catastrophe only, or against limited or named perils via restricted policy terms. Insurers would have to achieve a reasonable return for their share in covering the risks.

For governments, NGOs and donor organizations, Alternative 3 would mean gaining access to the risk management skills of the insurance sector, allowing it to shoulder specific parts of the overall risk exposure, and yet allowing these government authorities and organizations to provide any extra “socially desirable” cover that they deem necessary.

Under Alternative 3, active Asian rural credit and microfinance institutions might play an important role if they could team up with insurers and aquaculture associations/ organizations and mutual insurance companies. If the rural credit and microfinance institutions could open up and add additional services to their service portfolio (e.g. working as intermediaries to collect premiums and handle claim payments), then, through their often extensive rural networks, they could assist insurers to bring their services closer to the aquaculture sector.

Occasionally, these rural credit and microfinance institutions already have some experience in offering insurance services (life, health and crop) as intermediaries; it might be relatively easy for such institutions to widen their scope to include aquaculture.

However, it should be noted that most of these rural credit and microfinance institutions do not have much insurance knowledge and experience available in-house; nevertheless, they do have networks of rural offices and a detailed knowledge of their customer base (savings patterns, incomes, farm turnover, risks of non/late-payment, repayment schedules, etc.). They could therefore be reliable and useful partners for insurers willing to enter or develop the aquaculture insurance business, with the objective of reaching out to the majority of aquafarmers in Asia.

## **6. THE HYBRID INSURANCE APPROACH**

The third alternative requires the development of a coordinated approach between insurers and public bodies. This could be described as a *cooperative approach*, except that the word “cooperative” implies a looser arrangement than would be required in practice.

A legal framework is required to support the selected approach. Producers would be provided with documentation (e.g. what is covered, against what, how and by whom; and the effectiveness of insurance coverage) as evidence of the protection provided by insurers and a public body.

Perhaps the best description would be “hybrid”. Hybrid denotes “a mixture of incongruous/incompatible elements”, which seems to describe the situation well – profit-driven companies working with altruistic public bodies.

### **6.1 Insurance processes**

The commercial insurance sector has established ways of arranging insurance cover. A buyer (aquaculturist) would normally approach a broker; the broker would evaluate the buyer’s business and decide which underwriting market to approach. Having decided, the broker would then make a presentation of the business to the chosen insurer and the insurer would offer a quotation of terms and conditions. After negotiation over exact terms, an acceptance process would be undertaken, insurance cover put into operation, and a policy issued.

The successful introduction of a hybrid approach requires an understanding by the public organizations and their employees of the insurance processes involved, and a logical sequence of developments:

1. Creation of a suitable insurance market facility – an AAIP.
2. Identification of production facilities, areas, and producer associations, etc. that would benefit from insurance.
3. Collection of information on the farming organization and risk profiles of clusters and/or farmer groups, mutual insurance company members, etc., using standard risk information-gathering processes of the aquaculture insurance industry.
4. Assessment of the information by the underwriters under the AAIP.
5. Commencement of the risk management inspection and survey processes.
6. Preparation of insurance terms by AAIP underwriters.
7. Acceptance of insurance terms by the insureds, whether they be clusters/ farmer groups or mutuals.
8. If all processes experienced positive outcomes, then normal insurance practices, such as issuance of documentation, payment of premiums and survey fees, handling of claims and renewal processes, would fall into place.

### **6.2 How insurance processes A-F might work in the hybrid situation**

In the hybrid situation, the processes would probably operate as follows:

### ***A. Creation of a suitable insurance market facility – the Asian Aquaculture Insurance Pool (AAIP)***

In the review process for the establishment of an *insurance market facility*, it is essential that international organizations such as FAO and NACA officially support the initiative. This would assist expert insurance management companies to generate interest among international insurers, reinsurers and brokers. The broker's role is important because he/she has in-house knowledge on the establishment and running of mutual insurance schemes and can help gather information on producers and production facilities and processes involved. These include the application of BMPs, GAPs, good management practices (GMPs) certified production processes and risk reduction management procedures. This would be done by using the standard aquaculture proposal forms that have already been widely used.

By preparing case studies on the establishment and operation of mutual insurance schemes, including rules and responsibilities, procedures and planning, the insurance market can add to the knowledge base on this subject, share their experiences and thereby increase the feasibility of new mutual schemes in Asian aquaculture.

Interest and commitment from the reinsurers is probably the most important aspect in the establishment of the AAIP. The process can go to Step 2 only if both reinsurers and brokers are willing to commit themselves to the AAIP, which would indicate interest from the market. The efforts of expert insurance management companies in generating the interest of reinsurers and brokers is the key here. A “no” from the market would indicate that there is no place yet for a market facility aimed at providing insurance to small- and medium-scale aquafarmers in Asia.

### ***B. Identification of production facilities/areas and producer associations that would benefit from insurance***

This second step is likely to start with the organization of one or more missions to promising groups or clusters of aquafarmers in some countries. These missions would focus on identifying the most suitable clusters or farmer groups for introducing the hybrid approach. The role of FAO, NACA and other international organizations, in collaboration with national governments, would be to provide financial and technical assistance in making these missions possible. Participants in these missions include insurance company experts; international and national experts in insurance and BMPs; and the farmer organization.

Based on the findings of each mission, suitable farmer groups would be selected and proposed to the AAIP; selection will be carried out in a transparent manner. After having been identified by the missions, details of candidate groups of farms would be given to the specialist insurance brokers named under the facility, many of which have offices and contacts throughout Asia. They should be located locally and easily accessible.

The missions would also prepare awareness-raising and information materials during the missions. Importantly, they would work on establishing the public-private partnerships that would bring government agencies on board and initiate collaboration with the private sector.

The establishment of firm ties between the public and private partners is a prerequisite in the design phase of a market insurance facility. A public-private partnership arrangement may need to be formalized to this end. If no public-private partnership is possible in a country, the process would have to stop and later continue in a country with identified suitable clusters or farmer groups where governments are interested to get engaged in the activity.

Awareness raising on the basic concepts of insurance and mutual insurance companies and how they function should be provided by national experts with support



from FAO, NACA, APRACA members, specialist insurance and risk management companies, brokers and insurers actively interested in AAIP.

*C. Information collection on the farming organization and risk profiles of clusters/ farmers groups and mutual insurance company members, using insurance industry standard processes*

Having gathered all the necessary information, the next step would be for the AAIP brokers to provide the information to the underwriters on the AAIP facility.

*D. Assessment of the information by the underwriters under the AAIP*

*E. Commencement of the risk management inspection and survey processes*

Here is where risk management activities would likely begin. It is the first point at which insurers would have enough information to decide if a risk management survey needs to be carried out before a quotation can be made; whether a quotation can be made that is subject to a survey; or whether a survey would be necessary at all. This is also the point at which all other risk management considerations come into play – the type of systems involved, the equipment used and a whole range of other issues. All risk management surveys would have to be carried out, either by the insurer, an experienced loss adjuster with survey resources, or a specialist aquaculture risk management surveyor, always in close collaboration with the aquafarmers themselves, the agency involved and insurers.

A survey report will be produced, discussed and disseminated among directly interested parties. There may be reasons, including legal ones, for survey reports to remain confidential between brokers, insurers and their clients, who may be individual farmers, cooperatives or mutual insurance companies or other stakeholders.

*F. Preparation of insurance terms by leading underwriters*

Once the risk management approach is decided, the process begins by establishing what can be insured, under what terms and conditions, and at what cost.

In order for a hybrid approach to work, it is at this point that the involved public body will have to decide what social imperatives must be taken into consideration in designing insurance cover.

### **6.3 Methods of splitting cover between insurers and those covering “social” risks**

There are numerous ways in which a hybrid cover could be structured between insurers and a government, for example; it is impossible to deal with them in a single document. In the worst case scenario, an extremely complicated system of sharing cover might be required – but this is not necessarily so. The arrangement of the split could be extremely simple, as seen in the following are hypothetical examples.

Every insurance policy deals with the following issues, among others:

- the value insured;
- the rate of premium applied;
- the perils insured against.

Each of these issues could be divided between insurers and public bodies through very workable formats:

- (i) A valuation scenario. It is entirely feasible that the insurance sector could provide cover on a given group of producers’ interests by valuing the stock on the basis of the actual value at the size when it was lost. In other words, if fingerlings were killed, the policy would pay their actual value as fingerlings or would reimburse the investment made, up to fingerling size, in terms of seed purchase, nursing, feeding, stocking, drug administration, labour, water and electricity, etc.

However, if large fish were lost, the policy would pay their actual value at that size. This is a basis of valuation that insurers are generally unwilling to follow when dealing with small producers.

In practice, however, there may be many situations in which small producers cannot buy replacement fish of the size lost because none are available. This could cause livelihood distortions (e.g. food insecurity, loss of income, loss of employment) for farmers and their families. Their government or the NGO supporting them, might decide that it wants the farmers to be paid on a “market price” basis, i.e. the farmer would be reimbursed for what the fish would have been worth if they had reached a marketable size. This could be achieved by the public organization paying the difference between the value covered by the insurance policy and the final market value.

This is a typical arrangement that could be made under a special facility of the kind currently proposed. Insurers and their loss adjusters would adjust the loss on the basis of the policy provided for, but would then release their adjuster to help the public body pay the producer on the different basis. To avoid fraud, the public body would need the details of the insurance settlement. In addition, the loss adjusters attending the case for insurers should be free to adjust the market value loss for the public body involved.

- (ii) A premium scenario. In another situation, under the hybrid concept, there is nothing preventing a public body from paying a part of an insurance premium. This partial premium payment could either go towards payment of the entire commercial insurance premium or buying better terms of cover.
- (iii) A “perils” scenario. The hybrid concept could be used to help bridge the gap between the perils that insurers are prepared to cover and those that would be covered by the public authority or body. A flood would be a good example.

A group of producers might be located in an area of high exposure to floods, which the insurance sector was not prepared to insure, viewing it highly probable of occurring. Public interest, on the other hand, might be best served by ensuring that the sector is sustained if a flood does occur. Coverage against flood could be provided by the public body; other coverage (such as mortality caused by red tides and diseases) could be provided by insurers.

It should be noted that in a number of Asian countries, a compensation facility is set up to provide some relief to natural disaster-affected rural households. When such a facility exists, an insurance facility would not have to cover losses caused by government-recognized disasters for which a compensation facility is active. Such situations, however, would have to be clarified and understood by insurers and built into their policy and premium calculation processes.

These examples show how public interest could be coordinated with the insurance market and thus operate effectively alongside it. This relationship could be structured in many ways if a hybrid approach could be properly applied and with the understanding between insurers and the public body involved in each case.

#### **6.4 Insurance processes G-H**

##### ***G. Acceptance of insurance terms by the insureds, be they organized in clusters and/or farmer groups, or mutual insurance companies.***

The acceptance of insurance terms is a process normally conducted between the broker and the aquaculturist. However, if a hybrid process were used, the public body would have to be involved in designing cover and providing its details to the aquaculture producer association/organization. Mutual insurance companies would be capable of negotiating appropriate terms – i.e. the extent to which governments, NGOs and donors provide social cover – on behalf of their own members.



*H. If all processes experienced positive outcomes, then normal insurance practices would fall into place, such as issuance of documentation, payment of premiums and survey fees, handling of claims and renewal processes.*

Policy documents would need to be issued by insurers for the cover they are providing. Documents would also have to be issued, which would detail the involvement of the public body and the cover they are providing. It is very important that written terms be provided to the aquaculturist association or organization so that it would be able to know the details of the insurance policy arranged, and advise banks and lending institutions on the insurance.

The insurance sector issues policies and cover notes on all of its business transactions and would do so for its side of a hybrid arrangement. It is open to question how public bodies would arrange for cover that they would provide under their side of the arrangement.

Premiums and survey fees must be paid to underwriters and their funding might prove difficult for small-scale aquafarmers and their associations. One of the functions of the public bodies might be to fund premiums and fees until producers could successfully send their products to market. The premiums and fees could be paid to the public body when funds are available (e.g. directly after harvest). In case the individual small-scale aquafarmers do not have a bank account, the public body, together with the association/organization/mutual, could use their organizations' accounts to transfer premium fees on time to the insurer(s).

Claims in aquaculture have to be handled carefully for many reasons, particularly the difficulty in counting mortalities and the short period before dead stock starts to decay, especially in tropical climates.

All aquaculture insurance policies contain special loss reporting clauses and the specialist insurers and their loss adjusters have a great deal of experience in dealing with claims – this is an extremely important issue in aquaculture insurance.

In a hybrid arrangement, facility insurers would insist on controlling the handling of claims, at least as far as their interests are concerned. They have the skills and the skilled loss adjusters who know how to do this difficult work. Their approach can be described as “tough but fair” and, as clearly indicated above, they do **not** make payments on the grounds of social or community need.

Ongoing availability of an AAIP facility and renewal of individual policies provided under it would become very important to insureds. They would likely become dependent on the facility, which would support better living standards and their increased participation in society's mainstream economic and political process.

## **6.5 Other conditions needed for a successful hybrid approach**

The essence of a hybrid approach is that everyone is a winner – public bodies, farmers (their associations or organizations and mutuals) and insurers. The considerable risk management skills built up in the insurance sector would become available to the public sector – and to the networks of risk management surveyors, and importantly, the loss adjusters.

Much has been written about the insurance sector's risk management-led approach, which has helped them significantly improve their underwriting results. The approach works because it recognizes and directly confronts the peculiarities of aquaculture that often make it a high risk business and a **very** difficult one to insure.

If the hybrid concept is to flourish, however, real effort has to be made to upgrade aquaculture at its lowest levels. Much of this effort has to be made by the aquafarmers themselves and their associations/organizations/mutuals together with the public bodies. Moreover, they will need to address the following issues:

- the designation of clearly defined production areas where fundamental risks can be assessed and where adequate regulation can be applied to issues such as

licensing producers and implementing appropriate disease control measures. Disease regulations should govern effective biosecurity, including the restriction of movement based on risk analysis and compulsory slaughter, allow control of the import of non-indigenous species, and support the provision of diagnostic and veterinary resources;

- continuous adoption of the latest BMPs for the species and growing systems involved;
- promotion by public bodies in the formation of cooperatives, associations, producer organizations, small multi-producer groups and mutual insurance companies, and the adoption of standards and BMPs;
- the creation of difference in conditions (DIC) documentation by public bodies that defines the nature and extent of “social” cover that they are providing and relates it to insurance cover that insurers provide;
- the creation by public bodies of enabling conditions (legal and policy frameworks) that implement appropriate disease legislation and facilitate the formation of mutual insurance companies; and
- support needed by public bodies for the necessary training (including facilities) of the aquaculture producers and the insurance scheme administrators.

Both sides need to work together through:

- *Professional loss adjusters*. Joint loss reporting procedures will have to be devised.
- *Independent dispute resolution agents*. When public bodies provide socially desirable protection, disputes may well arise. There has to be a process – possibly a legal one, but preferably an arbitration procedure – to help avoid disputes.

### 6.6 Basic standards of operation

For hybridity to work, some levels of operation would not be acceptable to insurers. To be eligible for insurance, basic production conditions/situations have to meet minimum standards of operation; otherwise they could not be insured. These conditions include at least the implementation of BMPs by the aquafarmers and well as good record keeping at the farm level.

It would not be possible, for example, for the insurance sector to provide any form of cover for randomly organized and haphazardly run producer groups that employ casual growing procedures, have no knowledge of crop volumes and values and pond sizes, and are without any veterinary support. Such shortcomings would have to exclude producers from any scheme.

### 6.7 The role of governments, NGOs and donor organizations

These *Guidelines* are put forward to be used by public bodies, NGOs and donor organizations at the instigation of the participants in the Regional Workshop. A hybrid scheme can only work, in Asia or elsewhere, if public bodies, NGOs and donor organizations understand the processes involved and are committed to the concept and making it work. These entities can be important facilitators in the establishment and running of aquaculture insurance services. Their interest in the subject is from a different angle, but they generally understand that they can have a positive influence on the outcome of the process and that their support of the design and implementation of any insurance scheme/facility might be a key factor for its success.

It is important to note that government involvement in the development of insurance business has often been negative, e.g. by constructing market entry barriers, delaying the development of proper legislation and demanding measures from the insurance sector that add to increasing the costs and reducing the profitability of the insurance service. A more positive approach by governments towards “new” insurance services might pay off and make the service of selling and buying insurance more attractive,

to the less wealthy classes of societies such as small-scale aquafarmers. In this respect, the role of government subsidies in the initial phases of establishing and developing aquaculture insurance services could be positive for the development of the insurance business. Subsidies could either be provided directly to the insured to help pay for the premium; to associations/cooperatives/mutual insurance companies, etc. in order to help defray the high costs of serving numerous, dispersed, small-scale rural clients; or to help mutual insurance companies obtain reinsurance.

It should be noted that many governments in Asia already provide some compensation or forms of assistance to farmers for the loss of crops and household assets after large disasters such as typhoons/cyclones, flooding, tsunamis, disease outbreaks, industrial pollution/accidents and algal blooms. This kind of “social cover” never provides full compensation and is generally directed towards the provision of inputs to restart production. This social cover, as currently provided, may, however, deter farmers from seeking additional insurance services. Collaboration between governments and the insurance sector in establishing the extent and limitations of compensation arrangements would be beneficial to both and to farmers due to the added clarity.

It should also be noted that mutual insurance companies operate widely and successfully in agricultural industries in many parts of the world and therefore there is good reason to believe that their formation and operation may also be successful in aquaculture.

Governments have a clear role to play in the establishment and functioning of the hybrid approach. To facilitate easier access to insurance services, governments need to work on proper legal and policy frameworks in support of the development of the services. Insurance-friendly legislation would have to be developed (in countries where the hybrid concept would be applied). Governments could assist by: investing in the formation of aquaculture groups, associations, clusters and mutual insurance companies for easier distribution of insurance services; developing and assisting in the operational implementation of BMPs; and providing efficient services (e.g. disease diagnostic service, extension services and registration/licensing procedures/requirements). In summary, governments can contribute a great deal to the hybrid approach by creating an enabling environment for aquaculture insurance development.

NGOs in particular can be important contributors to the success of the hybrid approach as their strength lies in awareness raising, advocacy, organizing and education. NGOs may also have a role to play in the establishment and running of specific aquaculture insurance schemes for small-scale farmers; they could also function as service or business correspondents, providing cost-effective intermediary services for the insurers.

### **6.8 The role of self-help groups and aquaculture associations and cooperatives**

Self-help groups, associations and cooperatives are good vehicles to move this kind of insurance forward and make it accessible to and available for the small- and medium-scale aquaculture producers in the region. As mentioned, overheads in aquaculture insurance provision are substantial. Working through groups of producers reduces handling, administrative and operational efforts, thus making it more cost-effective to administer and manage risk. Mutual insurance companies can also contribute.

For international insurers, it would be an ideal arrangement to insure and/or reinsure groups of farmers – via their organizations or their mutual insurance companies – with similar farming practices. These include cultivating the same species; working on similarly small-sized farms; using a similar cropping calendar; being situated in the same geographical location; having common water sources; and having standardized production systems. Examples of such groups or clusters of aquafarmers include:

- India: shrimp aquaculture (same water, same area, similar BMPs, similar farm sizes);
- various countries: cage culture tilapia (standardized cage sizes and production methods);
- Iran: trout farming; and
- Thailand: shrimp farmers operating under a franchise scheme.

Self-help groups, clusters, associations and cooperatives are ideal vehicles for introducing, disseminating and promoting the application of BMPs in aquaculture. Their contribution to the feasibility of the hybrid approach is therefore without question.

### **6.9 The role of rural credit and microfinance institutions**

The hybrid approach might benefit from the involvement of rural credit and microfinance institutions. By teaming up with mutual insurers and cooperatives, rural credit and microfinance institutions might have the possibility to extend their service portfolio and provide the aquaculture insurance service to the same customer base as they already serve in addition to their current portfolio, which involves credit and savings functions.

The rural microfinance institutions might develop partnerships with the mutual insurance sector, using the available combined knowledge in a cost-effective manner to address the insurance needs of small-scale aquaculture farmers.

Since the demand for rural credit and microfinance is not growing (or not as rapidly as before) in some countries/sectors in Asia, and maintaining a network of rural area offices by rural credit and microfinance institutions in the region is costly, these institutions search for additional services to add to their portfolio, with the ultimate aim of generating profits. Teaming up with specialist insurers in aquaculture may be one of the more feasible services in this respect.

Using the current credit and microfinance channels also for insurance would be attractive to aquafarmers, since they often have already established a relationship of trust. In addition, the credit and microfinance institutions keep a track record of each client/customer and therefore, the provision of insurance services would be less of a risk for the insurers teaming up with the microfinance institutions than for new entrants in the business.

### **6.10 Communications and publicity**

The proposed approach cannot be developed without establishing and maintaining lines of communication between public bodies and the aquaculture insurance sector.

A series of biennial conferences on aquaculture insurance and risk management over the last 20 years have been regularly attended by representatives from all sides of the aquaculture insurance market. FAO supported and supplied two speakers for the tenth Aquaculture Insurance and Risk Management Conference<sup>5</sup> held in April 2006, in Vigo, Spain. Following this event, an informal liaison group was formed, the Ad Hoc Aquaculture Insurance Liaison Committee, which comprised insurance sector representatives. This group includes influential insurers, reinsurers, brokers, loss adjusters and other stakeholders interested in aquaculture insurance and risk management. It was formed to provide a means of communicating with FAO and can be used to liaise with governments, NGOs, donor organizations and other stakeholders concerning the creation of the insurance scheme proposed.

Membership of the liaison group is fluid; it is open to any professionals involved in the provision of aquaculture insurance and can be expanded as required. Copies

<sup>5</sup> © AUMSLtd. Organized by AUMSLtd. 112 Malling Street, Lewes, East Sussex, BN7 2RJ, United Kingdom  
See info@aums.com.

of these *Guidelines*, together with the outcomes of the Bali Workshop, have been circulated to the group, and responses obtained and conveyed as necessary.

### **6.11 The way forward – the Asian Aquaculture Insurance Pool (AAIP)**

*Guidelines* such as these need to be underpinned by a practical method of implementation. One way forward is to create what is known in the insurance sector as a *market facility*, in this case, as mentioned above, an Asian Aquaculture Insurance Pool (AAIP). Such a facility would be ideal for handling small- and medium-scale aquaculture production systems and processes, and enabling insurers to cooperate with the public organizations involved in seeking insurance.

A market facility is an agreement involving all the specialists in a particular type of insurance – insurers, reinsurers and brokers. It is used to create a collaborative framework for handling difficult areas of insurance. It enables insurers to join with experienced brokers, surveyors and loss adjusters, and in order to underwrite such business.

The advantages of a market facility are many: an effective approach to the difficulties and problems of the subject sector is coordinated; the best insurance specialists in the field become involved in handling and finding solutions to these problems; and a market is automatically set up for business to be presented to it– although there is no obligation to accept the business. It also allows to develop and coordinate insurance terms and conditions, and ways of dealing with various issues, from the design of policies to the handling of claims.

The establishment of an AAIP for addressing the insurance and risk management needs of small and medium-scale aquafarmers in Asia is uncertain. Much depends on the attitudes of the specialist insurers, reinsurers and brokers to the concept. The first responses from the insurance sector on the concept as set out in these *Guidelines* are, however, cautiously positive; which is viewed as a promising sign.

## **7. PURPOSE AND USE OF THESE GUIDELINES**

These *Guidelines* are for the consideration of those authorities, institutions and organizations in Asia that seek insurance and risk management services for the small- and medium-scale aquafarmers and the wider sector. They are for the consideration of public and private institutions and agencies, including governments, NGOs, donor agencies and aquaculture insurance sector professionals.

The *Guidelines* are also intended for the consideration of users and potential users of insurance and risk management services and by important stakeholders, i.e. aquaculture and fish producer associations, organizations and cooperatives; and government departments, NGOs, donor organizations and institutions concerned with encouraging developing aquaculture as a way to reduce poverty.

## **8. CONCLUSION**

Many questions arise from these *Guidelines* as well as many “ifs” and “buts” associated with them. Nevertheless, FAO, together with NACA, APRACA and many of their member governments and institutions, seek to boost the availability of aquaculture insurance to developing aquaculture; these *Guidelines* offer some ideas of how insurers and public bodies might work together to provide what is needed. The insurance sector appears to be able to organize itself so that it may fulfill its role in the hybrid process, but it remains to be seen whether the public bodies can do the same.

## **ACKNOWLEDGEMENTS**

FAO, NACA and APRACA gratefully acknowledge the important work carried out by Mr Philip A.D. Secretan, Managing Director of AUMS Ltd. Aquaculture Underwriting Management Services, who created the first draft of these *Guidelines*,

devised the *hybrid approach* concept and put forward the use of a market insurance facility as a way of implementing the concept. The contributions to this draft by Raymon van Anrooy, Susana Siar, Ake Olofsson and Melba Reantaso (FAO), Mr. Pedro Bueno (NACA) and several experts from the insurance sector are greatly appreciated.

These draft *Guidelines* were presented and discussed as proposals at the Regional Workshop on the Promotion of Aquaculture Insurance in Asia, held in Bali, Indonesia, from 30 April to 2 May 2007 and finalized in their present form, which includes comments and observations received from the workshop participants and other insurance sector experts in June 2007.



# Report of the Regional Workshop on the Promotion of Aquaculture Insurance in Asia

## I. INTRODUCTION

### 1. Background

According to FAO estimates, out of approximately 11 million aquafarmers in Asia, some 4 500 are insured for their aquaculture crops, which is less than .05 percent. Only some large-scale aquaculture enterprises are currently insured; small-scale entrepreneurs have yet to access a commercial insurance service. Considering that aquaculture has been growing more rapidly than all other animal food-producing sectors, with Asia contributing more than 90 percent of world production by volume, there has been a widely felt need to strengthen the aquaculture risk management strategies and capacities in the region. Insurance is considered an important component of these strategies.

The Regional Conference on Insurance and Credit for Sustainable Fisheries Development in Asia was organized jointly by FAO, the Asia-Pacific Rural and Agricultural Credit Association (APRACA) and the National Federation of Fisheries Co-operative Association, Japan (ZENGYOREN), and held in November 1996 in Tokyo, Japan. The conference showed that insurance for inland capture fisheries and aquaculture had received little attention in the past despite the clear need expressed by inland fishers and aquaculturists in the region.

Some of the recommendations of this conference remain valid more than a decade later: (i) all parties (policy- and decision-makers, banking institutions, insurance agencies, fishers and fish farmers) must understand the benefits and obligations of the beneficiaries of fisheries insurance; (ii) the legal and policy environment of the country should be favourable to the fisheries insurance; and (iii) the management capacity of fishermen's organizations and local entities should be sufficient to sustain such initiatives.

An FAO review of world aquaculture insurance, *Review of the current state of the world aquaculture insurance* (van Anrooy *et al.*, 2006) carried out in 2005-06 indicated a high demand for aquaculture insurance. One of its conclusions was that the gap between the demand for and supply of aquaculture insurance in Asia was increasing. It noted that since the start of the new millennium, underwriting experiences have been improving and aquaculture insurance is becoming profitable, but no data were obtained on Asian experiences. Other conclusions include: (i) mutual insurance schemes in aquaculture remain insignificant; (ii) a lack of enabling policy and regulatory frameworks for aquaculture and fisheries insurance; (iii) in Asia, "named perils" type policies are more common than the "all risks" type for aquaculture insurance; (iv) shrimp is difficult to insure and fish health problems are the major cause of losses in Asian aquaculture; (v) many insurers in Asia focus on a small number of traditional aquaculture species and are hesitant to include "new" species and culture systems; and (vi) few governments subsidizes insurance schemes for aquaculture in Asia.

In February 2006, in Beijing, China, FAO, Asia-Pacific Rural and Agricultural Credit Association (APRACA),<sup>1</sup> the China Society of Fisheries, the East China Sea Fisheries

<sup>1</sup> See [www.apraca.th.com/index.asp](http://www.apraca.th.com/index.asp).



Research Institute and the Chinese Academy of Fishery Sciences jointly organized the Regional Workshop on Guidance for Credit and Microfinance Programmes in Support of the Sustainable Use of Inland Fisheries Resources and Poverty Alleviation. The workshop recommended, among other steps, the organization of a regional workshop on the promotion of aquaculture insurance.

The response was agreement among FAO, Network of Aquaculture Centres in Asia-Pacific (NACA),<sup>2</sup> APRACA and the Indonesian Directorate General for Aquaculture to organize the Regional Workshop on the Promotion of Aquaculture Insurance in Asia, the first of its kind in Asia.

## 2. Objectives

The objectives of the workshop were to:

- (i) raise awareness among policymakers on the positive aspects and limitations of insurance schemes as a risk management tool for the sustainable development of the sector as well as of other risk management tools;
- (ii) present the Asian aquaculture sector to the insurance industry and illustrate its potential to become a profitable segment to insurers in search of new markets;
- (iii) discuss ways and means to support aquaculture management and development through the introduction of insurance schemes as an additional risk management tool;
- (iv) reach a consensus on certain guidelines for insurance in support of aquaculture development in Asia and what they should include.

## 3. Outputs

The workshop was expected to result in:

- increased awareness among policymakers and insurance industry stakeholders of aquaculture risks and the role of insurance in their mitigation;
- increased appreciation among policymakers and industry stakeholders of the real prospects for and limitations of aquaculture insurance;
- draft guidelines on how to develop and promote insurance and alternative/complementary risk management tools in support of aquaculture development in Asia;
- recommendations for follow-up activities by the insurance industry, governments, aquaculture entrepreneurs, and national and international development agencies.

## 4. Participation

There were 50 participants from 15 countries in Asia and experts from other regions. The participants involved (Annex 1) have expertise in aquaculture as well as capture fisheries, insurance and/or credit.

## 5. Proceedings

The workshop took place at the Inna Kuta Beach Hotel in Bali, Indonesia, from 30 April to 2 May 2007. The opening activities included the following welcoming speeches of representatives from the Government of Indonesia, FAO, APRACA and NACA.

### *Director General for Aquaculture, Government of Indonesia*

Dr Reza Shah Pahlevi read the welcoming remarks of Dr Made Nurdjana, the Director-General for Aquaculture of Indonesia. He emphasized that aquaculture is often viewed as a high-risk business and enumerated a number of hazards and risks that aquaculture and capture fisheries face. He particularly noted that small-scale aquaculture is extremely vulnerable to risks, which can be managed with better management practices

<sup>2</sup> See [www.enaca.org](http://www.enaca.org).

(BMPs), adherence to codes of practices, as well as the adoption of certification and management schemes such as HACCP, ISO, GMP, eco-labelling and others.

Dr Nurdjana also stressed that while insurance is an important measure for mitigating some of the risks, it is no substitute for good management practices. He added, however, that insurance has an important role to play, particularly as a mechanism for removing the residual risk that cannot be covered by on-farm actions. In this regard, insurance is an important tool in risk management. He noted that the insurance sector in Indonesia as a whole is underdeveloped, although there has been strong growth in recent years. One important issue in aquaculture is whether the small-scale sector can provide a significant volume of business that is attractive to insurers. He recommended that this be addressed through strong collaboration among Asia-Pacific countries and the various agencies and organizations helping small-scale aquaculturists develop. He considered the workshop an important step to this end and thanked the collaborating organizations, FAO, NACA and APRACA, for the initiative. He welcomed the participants and thanked them for finding the time to contribute their expertise and experiences to the workshop.

#### *FAO Representative in Indonesia*

Mr Man Ho So welcomed the participants on behalf of FAO. Referring to the recent disasters that struck Indonesia and other countries in Asia, such as the Tsunami in December 2004, he indicated that more recent earthquakes and recurrent floods have created enormous risks to the population. As such, they underline the extreme importance of developing and improving tools and human capacities to reduce and manage risks, mitigate their impacts and better cope with their effects. Insurance is an important tool in risk management; however, while people commonly buy insurance to cover property, such as cars, and health and life insurance, they buy insurance for agriculture and fisheries less frequently.

He briefly presented FAO activities and mentioned that FAO in Indonesia has always worked closely with the local population, the government, non-governmental organizations (NGOs) and donors in many development activities, particularly in the aftermath of the Tsunami. He broadly described the emergency assistance, rehabilitation and development initiatives that FAO has implemented following the Tsunami and other disaster events that occurred in the country. In the fisheries and aquaculture sector-related interventions, FAO provides and supports numerous staff and rehabilitation and development projects in Aceh that aim at rebuilding the livelihoods of poor coastal fishers.

Concerning the institutional participation in the workshop, he mentioned that FAO's organization of this regional workshop with regional partners is consistent with its strategy to cooperate with regional bodies and build on existing networks and programmes of its partners to more effectively address the problems and needs of developing countries and their rural populations. This workshop provides FAO with the opportunity to raise awareness on FAO initiatives in aquaculture insurance as a risk management tool among line ministries, the insurance industry and the aquaculture sector in Asia and to promote developments in areas related to supporting the implementation of the FAO Code of Conduct for Responsible Fisheries.

#### *APRACA Representative*

Mr Donato Endencia, Vice President, Land Bank of the Philippines, and representing APRACA in this event, expressed that the Association is honoured to be a partner of FAO, NACA and the Indonesian Directorate General of Aquaculture. Fisheries finance and development are included in APRACA's six-item agenda in the medium term. The Association is actively involved in supporting and documenting best practices and success cases to increase financing for this sector. Since insurance plays a

pivotal role as a credit risk management mechanism, APRACA constantly encourages its member institutions to actively collaborate with like-minded partners in pilot-testing, replicating and expanding tested schemes that show high levels of efficiency, effectiveness and sustainability. The prospects of aquaculture insurance are bright, although much more needs to be done to translate options, concepts and designs into action. He especially stressed the need for a pro-active response to small farmers' needs, which should be closely monitored, supported and eventually institutionalized. He concluded that the roles of international development organizations such as FAO and NACA are critical in nurturing these initiatives into meaningful performance.

#### *NACA Director-General*

Professor Sena De Silva, Director-General of NACA, provided a brief overview of NACA for those unfamiliar with the organization, particularly the representatives from the credit and insurance sectors. NACA is an intergovernmental organization of 17 member governments in Asia-Pacific, working closely in cooperation with FAO and many other regional and national organizations. Its primary mandate is ensuring sustainability in aquaculture and improving and safeguarding the livelihoods of small-scale farmers. He noted that aquaculture insurance in Asia is not established as much as it should be, particularly considering that over 80 percent of production comes from the region. He is pleased that the workshop provides insurers, bankers and other financial institutions to meet face-to-face with aquaculture developers and planners drawn from the governments of the region. It is the first gathering of this nature in the region. It is therefore a good opportunity for the financiers and insurers to better understand the problems facing producers and the *modus operandi* of the aquaculture sector in Asia, which, he pointed out, differs in many ways from those of nations in the developed world. He believes that Asian aquaculture, consisting of many small-scale enterprises, poses different challenges to insurers and financial service providers. He expressed hope that this workshop would provide an opportunity to start the process of aquaculture insurance to small-scale farmers.

## **6. Methodology**

Following the opening activity, there were three sessions in which resource papers were presented and discussed in plenary. The first session consisted of two background papers on the following topics: *Analysis of the aquaculture insurance industry: lessons learned and opportunities for sustainable development* and *Insurance as a risk management tool based on experiences in livestock and aquaculture insurance in developing countries*.

The second session consisted of presentations on a number of themes, including: (i) linkages between credit and insurance; (ii) the role of BMPs in aquaculture insurance; (iii) aquatic animal health and insurance; and (iv) the role of rural and microfinance institutions in developing and promoting aquaculture insurance, based on the Philippine experience.

The third session consisted of presentations from the insurance industry on their experiences in aquaculture underwriting; and the microfinance institutions, agricultural development banks and national fisheries agencies on their experiences in aquaculture insurance and its prospects.

These three sessions were followed by a discussion via three working groups focusing on the *Draft Guidelines for Action* prepared for the conference by Mr P.A.D. Secretan, Managing Director of AUMS Ltd. in collaboration with FAO staff. The paper proposed and described an approach to meet insurance and risk management needs in developing aquaculture in Asia.

The fifth and final session was dedicated to the formulation of the workshop's conclusions and recommendations, and their adoption. It preceded a short discussion

of general follow-up activities, such as communications among participants and activities at the national level envisioned by some participants.

The Workshop Programme appears as Annex 2. The presentations and the report of the working group sessions are summarized as follows:

**A. Summary of overview, thematic and industry sector presentations**

- i. Analysis of the aquaculture insurance industry: lessons learned and opportunities for sustainable development, *by P.A.D. Secretan, Managing Director, AUMS Ltd.*

Insurance has a long history; it is important to understand its basic principles. Contrary to popular belief, the role of insurance is to spread, not to assume risk. This principle is well described in two quotations taken from a 16<sup>th</sup> century definition of insurance: “ [...] the spreading of the load over many shoulders” and “[...] the loss settles more easily upon many than upon a few.”

The role of the insurer, also known as the “underwriter”, is to calculate the right premium for all the risks in a class that will cover the cost of paying all claims and the expenses involved and will make a profit.

There are many insurance schemes that a professional aquaculturalist needs in order to protect his or her business and livelihood, most of which are readily available from insurance markets. However, the nature of aquaculture means that there are some areas in which the industry’s peculiarities and risk profile come into play, making certain types of insurance difficult to handle and thus difficult for the aquaculturist to buy. The difficult kinds of insurance for aquaculture include liability insurance, especially product liability, and workman’s compensation, particularly where diving is involved. The most difficult area to insure is livestock. This is the area focused on here because it is the most important insurance class to aquaculturists: in order to properly protect their businesses, they must insure their stocks of fish and shellfish.

There were some very serious losses in the early years of aquaculture insurance caused by, for instance, large fish kills from plankton blooms, super chill, diseases and storms. There were also numerous smaller losses caused by floods, bad feed, broken pipes, pollution, sabotage, theft, non-catastrophic diseases and many other perils. The companies that have survived and stayed in the business are those that have adopted and maintained a total risk management-led approach.

The fact that aquaculture insurance is risk management-led makes acquisition costs for insurers very high. Every risk has to be very carefully assessed. A great deal of information must be gathered on each farm and evaluated. The process of evaluation demands high levels of skills of insurers and brokers. Insurance policies must be very carefully constructed and when change occurs within an operation, which is frequent in most sites, new information has to be gathered and evaluated. This is a further cost to insurers. Even if the costs of adjusting losses and potential losses are excluded, insurers’ costs of servicing aquaculture stock insurance are very high. Unfortunately, aquaculture insurance is just one class in a very large market. There are many other sectors with which insurers work or can work that are easier to handle and much less risky. Aquaculture insurance initially produced bad results, but things have changed recently and insurers are beginning to make money. Insurers have gained a massive amount of experience.

Across the whole of aquaculture, it is difficult for insurers to find “good business”, i.e. business that is well-managed and well-financed. In many countries, the legal framework may be very difficult for insurers to operate under. This is particularly relevant where disease is concerned. Issues such as the importation of non-indigenous species; compulsory slaughter, the control or lack of control over movements of aquatic creatures can all impact adversely on insurers’ ability to provide good and reliable insurance.

Shortages of skills are a key issue, particularly in Asia. Fish farm evaluation requires a high level of skill and considerable experience. Although a high level of skill in underwriting and adjusting has been built up in the aquaculture insurance market and the skills base is gradually widening and deepening, it is not wide enough to handle large numbers of small producers of the kind that is the focus of this workshop.

Equally limited are the human resources in Asia. There are numerous insurance brokers in the region as well as experienced loss adjusters, e.g. at Crawford & Co., but few skilled local brokers and surveyors.

The risk management-led standards sought by insurers work against small producers. Large well-capitalized companies employing high-grade management practices are more favourably placed to buy aquaculture stock insurance. However, this does not apply to shrimp, because the way in which they are farmed makes it difficult to determine the cause of loss. Insurers are only just starting to provide cover on shrimp production and only on an experimental basis.

Small producers generally lack the basic management skills and operational standards that insurers require to be eligible to buy cover. Size is also an issue. Insurers prefer to do business with big producers who pay substantial premiums, thus contributing an economy of scale to insurers' acquisition and servicing overheads.

For insurance to become available to small producers, their operating standards have to move towards those of the large companies – to the extent possible – and be organized into larger units, producing greater premium volumes. Insurers must be confident that the farms they are considering insuring are well managed and not exposed to unduly high risk.

Much of the information-gathering process is carried out by brokers, many of whom have developed high levels of risk management skills. Specialist surveyors have also developed aquaculture survey skills that enable them to inspect a farm and provide a reliable report to an insurer. It is also important to insurers that the tools for handling disease are in place, e.g. appropriate diagnostic facilities and background legislation restricting movements of diseased stock and enabling compulsory slaughtering of diseased stock when necessary. Since broad aquaculture insurance skills do not exist widely in Asia, they need to be developed.

Insurers cannot take on social risks, which will have to be underwritten by governments. But the all-round application of BMPs will make social risks less relevant. Insurers will become involved if they can envisage profitability.

A hybrid approach to handling risks by splitting them between governments and insurers was described and proposed for consideration.

*ii. Insurance as a risk management tool in aquaculture, by Ake Olofsson, Rural Finance Officer, FAO Rome*

Risk management can be defined as care to maintain income and avoid/reduce loss or damage to a property resulting from undesirable events. The key to determining who bears risk is finding out who will suffer a loss if something bad happens.

“Risk management practices” embrace a wide range of mechanisms that are the foundation of sound farm management, including policy issues, for example: site licensing, regulations relating to such matters as quarantine and compulsory veterinary procedures. They also include on-farm physical measures, such as attention to structural maintenance of fences, cages, racks and housing, as well as disease surveillance, and preventive and curative veterinary procedures.

Risk management can also involve financially-based mechanisms such as share-farming, farming partnerships, and Islamic-type borrowing where the lender shares the potential profit and the potential loss. Another form of risk management is the forward sale of output and other types of contractual farming arrangements. Although one of



the most often-quoted tools for risk management, the role of insurance is confined to situations where there is no other suitable risk management technique or where insurance products can be designed to be advantageously cost-effective. In addition, insurance does not and cannot obliterate risk – it spreads risk.

*Risk mitigation and reduction strategies* are developed prior to risk events to reduce exposure to the potential occurrence of the risk, while *risk-coping strategies* reduce the impact of a loss after the risk event has occurred. Too much emphasis on risk-coping strategies tends to prejudice risk reduction strategies, which in some cases might be more appropriate.

Steps in the insurance development process include: assessing demand; identifying key insured parties; determining the most important factor to insure and the perils against which the parties will be insured; determining the types of enterprise to be covered; and identifying the complementary roles of the private sector and government.

Much attention is given during the design of aquaculture insurance programmes to avoiding tensions between the private and public sectors. It is particularly important to ensure that any existing or new entity has a sound legal basis on which to offer insurance products, with the required level of business competence, and to clarify the government's objective in promoting insurance for livestock and aquaculture producers. A public subsidy toward the payment of an insurance premium is more of a private good; it would therefore be advisable to instead focus scarce public monies on developing the favourable conditions for the emergence of insurance markets.

Effective agricultural risk management must be seen as an “integrated layer system”, which includes: on-farm, individual risk-reducing and -coping activities and strategies; informal group-based or mutual insurance schemes; formal private market insurance programmes; and government-sponsored and -financed catastrophic disaster relief programmes.

*iii. Linkages between credit and insurance, by Susana Siar, Fishery Industry Officer, FAO Rome*

Small fish farmers can contribute significantly to food security and foreign exchange earnings. In a joint FAO/INFOFISH study (2005), it was estimated that in 2003, there were 10–15 000 fish farmers in Malaysia, 90 000 in India and 30 000 in Thailand. The contribution of small farms to total output from inland culture fisheries was 100 percent in India, 10 percent in Malaysia and 69 percent in Thailand. In coastal/marine fisheries, the contribution of small farms to total landings was 95 percent in India, 5 percent in Malaysia and 45 percent in Thailand.

Small fish farmers are exposed to different sources of vulnerability, whose characteristics are:

- natural (storms, floods, drought);
- production-related (lack of access to seed and feed; disease outbreaks);
- environmental (pollution from industry and other sectors);
- ecological (introduction of non-indigenous species that may harm existing fish stocks and biodiversity);
- development-related (construction of infrastructure in the vicinity of aquaculture farms; changes in land and coastal use patterns);
- market-related (changes in prices in domestic and international markets, in consumer preferences, and in standards that affect the trade in fishery products);
- social (poaching and theft; conflict between aquaculture and capture fisheries; unclear property rights; competition with other sectors for land and water);
- political (changes in peace and order conditions); and
- personal (illness and death in the family).

Not all of the above sources of vulnerability may be addressed by insurance. However, the siting and management of aquafarms within the context of an integrated area management should be promoted by the government, as well as the legitimate ownership of aquafarmers over their operations.

While banks, microfinance institutions and insurance companies have a major role to play in providing financial services, other entities such as NGOs are also required. NGOs can assist in organizing small farmers and strengthening and building the capacity of their organizations to enable them to access financial services.

Credit and insurance can reinforce each other. Credit enables small farmers to access production inputs and invest in sustainable production technologies. Insurance gives the small farmer peace of mind, because it cushions the impact of losses and enables him or her to increase access to credit and capital because insurance reduces the risk of non-payment. Together, credit and insurance companies can conduct the following: joint needs assessment; joint marketing and promotion of services; joint agents at the village level to increase services and decrease administrative costs; joint capacity building of agents and extension officers; and a joint register of good and bad clients.

Credit and insurance share the same goals: sustainability of the fish farming enterprise and resilience of the aquafarming household. The realization of these goals would lead to a stable income for the fish farming household, food security for the population and foreign exchange earnings for the country.

#### *Discussion*

Lessons learned from insurance of small-scale capture fisheries may be transferable to the small-scale aquaculture sector. Insurance for small-scale fishers focuses more on assets insurance and life insurance for fishers related to their vulnerability at sea, and therefore may not be particularly comparable to aquaculture operations.

#### *iv. Role of Better Management Practices (BMPS) in aquaculture insurance, by Pedro B. Bueno of NACA*

A farmer can mitigate or reduce risks to farming activities by adopting BMPs and spreading risks through insurance. This review draws evidence from projects and experiences in India, Viet Nam and Thailand that BMPs, Good Aquaculture Practices (GAPs) and Codes of Conduct (in shrimp aquaculture) can be tools to help small and poor aquafarmers acquire the capacity to access financial products. A large part of this capacity comes from knowledge and skills to manage on- or off-farm risks. This ability improves the chances for a successful crop, its profitability and sustainability, which allow the farmer to become insurance- and credit-worthy. In turn, insurance can be a tool to encourage farmers to take up BMPs and to get organized. More than just a risk management tool, insurance may provide part of the total service support system for small-scale farmers.

#### *Discussion*

It is claimed that BMPs can assist small-scale farmers in becoming insured, but some participants questioned whether this actually occurs. In India, while BMPs are not an insurance service, the application of the BMPs did encourage the State Bank of India to provide crop production loan, without collateral, to small shrimp farmers taking up BMPs and becoming organized. The review also cited crop insurance schemes in the United States that are based on farmers adopting specific better farming practices.

Farmers in the projects cited in the review are certainly improving their production and reducing risks. The Asian Governments' willingness to promote BMPs and expand their application yielded positive effects. The prospect of access to insurance can be used as an incentive for adopting BMPs or improved management actions by

small farmers. It was noted that regular premium payments can be problematic for aquafarmers in certain microfinance schemes, because in an aquaculture operations, income is only available at the time of harvest. This raises problems for regular savings or payments, unlike in the capture fisheries sector where income is generated on a more or less daily basis.

v. Aquatic animal health and insurance, by *Melba Reantaso, FAO Rome*

The presentation discussed the following factors contributing to the current disease situation in the Asian region:

- increased globalization in the trade of aquatic animals and their products;
- enhancement of the ornamental fish trade;
- negative interactions between cultured and wild aquatic animals;
- slow awareness on emerging diseases;
- poor biosecurity measures;
- misconception on the use of specific pathogen-free (SPF) stocks; and
- climate change; and
- human-mediated movement of aquatic species.

Health management strategies were also presented, which cover international codes, regional guidelines; national strategies on aquatic animal health; diagnostics, therapy and information technology; research and extension; biosecurity measures and risk analysis; surveillance and reporting; farm-level health management; institutional strengthening and manpower development; and emergency response to disease epizootics.

National strategies on aquatic animal health serve as a framework for the national-level implementation of the *Regional technical guidelines for the responsible movement of live aquatic animals*. These contain the government's short-, medium-, and long-term action plans to implement the provisions on a phased basis. Risk analysis was emphasized as a science-based decision-making tool that provides decision-makers with an objective, replicable and documented assessment of risks posed by a particular action.

Farm-level management and the role of the farmer are critical aspects of health management. Dealing with day-to-day situations in farms, farm health management is of prime importance in preventing, controlling and possibly eradicating serious diseases. Farmers who are well informed understand the risks to their operations and others that arise from inappropriate practices. Informed farmers tend not to use antibiotics against viral diseases, not throw dead infected fish or drain contaminated water into open waters and not trade infected fish. The *FAO Technical guidelines for responsible fisheries, Aquaculture development 2, Health management for responsible movement of live aquatic animals* covers various aspects of management that relate to the management and mitigation of such risks. It contains potential guidance for aquaculture insurance.

It was concluded that: (i) aquatic animal health is a key element in the overall biosecurity framework covering risks in food safety, animal health, plant health and the environment; (ii) improving aquatic animal health and biosecurity (pro-active disease risk analysis) is a major challenge – this analysis is done in a way that incorporates the best information available on aspects of husbandry, epidemiology and sound science; and (iii) aquatic animal health management is an integral theme to address current aquaculture trends towards intensification and diversification, regulation and governance of the sector through national strategies.

Pathogens are hazards and the risk elements are clearly understood; therefore, there are ways to manage and reduce the risk. Aquaculture insurance therefore plays an important role to play to support healthy aquatic production.



### *Discussion*

It is difficult to insure against risks to production that arise from health-related losses if the health management framework is weak. In particular, continued unregulated transfers and introduction to the environment of pathogens present significant risks. Health management is one of the most important aspects of insuring stock against losses. One option available to underwriters of aquaculture insurance is to specifically exclude disease coverage, therefore making it possible to be insured without coverage for health issues.

Due to the large number of species cultured in Asia, there is a correspondingly large number of diseases. This increases unpredictability of production. On a species basis, the hazards related to diseases would be quantifiable with adequate research/analysis of risks since there is an information base on the different pathogens.

Fish kills are one of the most obvious situations for which insurance cover is desired. However, "fish kills" are not always related to health and most often result from toxic conditions (low oxygen, pollution, plankton blooms, floods and other extreme hazards). Such events could therefore be covered separately from loss from disease.

*vi. The role of microfinance institutions in developing and promoting aquaculture insurance in Asia (Aquaculture Insurance in the Philippines: Constraints and Opportunities), by Ramon C. Yedra, Deputy Executive Director, Agricultural Credit Policy Council, Philippines*

While there is limited experience in linkages between rural credit and insurance organizations in Asian countries, there is considerable experience in other insurance schemes that target small farmers and rural poor households. Banks and rural credit institutions view insurance as a credit risk reduction mechanism. In some cases, as in crop insurance, it serves as a collateral substitute that protects the banks from loss arising from loan defaults. Thus, any expansion of insurance services for their loan clients is a welcome development for banks and rural credit institutions.

The experiences of some Asian countries in linking credit with agricultural insurance and with micro-insurance provide interesting lessons. Insurance is sometimes applied as a condition for a loan. Lessons learned from the Philippines case demonstrate: 1) the difficulty in attaining the standard needed to obtain agricultural insurance, especially for small farms; 2) that where the loss ratio is too high insurance premiums constrain small farmers from buying insurance; and 3) the merits of demand-driven insurance, i.e. where there is a viable market for insurance, the private sector is attracted.

Agricultural insurance in the Philippines is implemented by a government corporation, the Philippine Crop Insurance Corporation (PCIC). The PCIC insurance programme provides protection to agricultural producers against loss of crops, livestock and agricultural assets due to natural calamities, plant pests and diseases and/or other perils. The insurance period is from planting to expected date of harvest. Loss coverage includes natural calamities, plant diseases and pest infestation. Non-covered losses include: fire, theft and robbery; avoidable risks emanating from neglect, strong wind and rain not induced by typhoon; and losses that occurred outside of the term of the coverage. Rice and corn insurance are the major product line.

There has been no insurance programme for aquaculture or capture fisheries in the Philippines. In 1998, an act mandated the PCIC to cover inland fisheries, fish cages and fish pens. In 2001, an Administrative Order was subsequently issued by the Department of Agriculture, providing the guidelines for the insurance coverage of non-harvested stock in fishponds, fish pens and fish cages, including seaweed farms and other aquaculture projects. However, the government funding commitment to PCIC indicated in this order was not provided.

The crop insurance programme has suffered a number of constraints, which may similarly be faced by an aquaculture insurance programme. These include: (a) *high overhead costs*. While PCIC achieved an average loss ratio of 0.83 over a ten-year period, overhead costs were so high that it caused the corporation a net operating loss. The high overhead costs are attributed mainly to the large field staffing requirement for claims validation; (b) *limited investment fund or capitalization*. The government's capital is only PHP905 million, thus limiting its investment earnings; and (c) *premium pricing*. The loss ratio is less than 1 when the government subsidy on premium rate is included. The government is expected to subsidize 54 percent of the total premium. Thus, without subsidy, PCIC would have claims exceeding premiums paid; PCIC's claims rate, an average of 8 percent, is well below the standard of 15 percent. On the other hand, PCIC could not raise the premium rate to be paid by farmers because they are highly sensitive to increased rates.

The commercial insurance industry in the Philippines caters largely to middle- and higher-income brackets, rarely to the poor. The demand for insurance services to the poor is fulfilled by several regulated, cooperative-owned insurance organizations and mutual-benefit associations (MBAs) and by non-regulated (or informal) insurance schemes of cooperatives and NGOs. MBAs are registered non-stock, non-profit organizations whose members are also the policyholders and are licensed by the Insurance Commission to offer insurance services to their members. As of December 2005, there are 20 licensed MBAs. PCIC has been the sole crop insurance provider to Filipino farmers for the past 25 years. Yet, the maximum number of farmers that it has serviced in any one year is less than 7 percent of the estimated 5 million smallholders. No private company has ventured into crop insurance. On the other hand, credit life insurance targeting the poor (micro-insurance) has attracted the private sector even without government subsidy. These indicate that there are merits in a market-driven insurance programme as opposed to a subsidy-dependent insurance programme run by a public body.

As concerns micro-insurance, there is a growing demand for credit life insurance among the borrowers brought about by the rapid growth of the microfinance industry. The entry of more mutual benefit associations should continue to be encouraged. This must be coupled with prudent regulation by the Insurance Commission to protect policyholders. To date, the minimum capitalization requirement for MBAs seems to be working. Over time, however, the MBAs may find merit in consolidation to achieve efficiency, but this must be their decision. They have diverse membership with different affiliations such as the cooperative sector and NGOs. Thus, even if it might be more economically profitable for them, they may not be inclined to merge. Support from donors and the government should come in the form of technical assistance and capacity building in skills such as market surveys and product design to further improve the viability of their operations.

#### *Discussion*

There are schemes such as micro-credit life insurance that work on the basis that if the borrower dies, the insurance company pays the bank according to the unpaid loan balance. There are other schemes where the life insurance pays a lump sum to settle debts, with the balance going to the surviving next of kin.

Agricultural insurance covers crop damage caused by unforeseen risks (e.g. storm damage) and some specific pests and diseases. Variation in premiums is applied to address different risk situations; those in calamity-prone areas pay higher premiums.

The *value-chain approach* can assist in identifying the best opportunities to provide insurance. The reduction of losses and risks among other actors in the value chain may be as important as among farmers. This approach is a means to identify where

insurance may be required (e.g. with transporters, middle men, etc.); however, separate insurance schemes may already be in place for this.

*vii. Aquaculture in Asia and loss adjusting principles, Mark Vos, Director, Crawford & Company (Nederland) B.V.*

The presentation focused on loss adjusting principles applied in the aquaculture insurance market. Emphasis was given to the mortality and equipment insurance policies and the accompanying need for risk management information. The latter would allow underwriters to consider the risk and their ability to provide insurance coverage.

In general, risk management information for underwriting purposes considers not only the hazards of the sites that may be exposed to losses, but in particular, the attitude and professionalism of the insured and his/her staff.

Some of the main focus areas are therefore:

- veterinary management as a whole, including a prompt response to disease and sudden rise in mortality;
- equipment quality and maintenance;
- the attitude of the insured and his/her competence;
- accounting standards, stock records and auditable quality;
- regional economic and veterinarian support and its influence on potential mandatory slaughter; and
- harvest strategies in relation to season/climate conditions.

Examples were given of the potential difference in professional administrative standards, including the application of good veterinarian practices for small- and medium-scale farmers, resulting in exclusion of insurance cover, as claims cannot be calculated on information required for underwriters' consideration. Examples were also given that fisheries departments and similar public bodies were already reacting and in control when toxic and disease issues arise, which could affect the entire market and its depending economy.

Aquaculture and related businesses need to mature in order to enable the insurance industry to become more systematically involved. Crawford & Crawford's mission being that of a global claims provider, it has expertise that FAO, NACA and aquaculture and fisheries entrepreneurs may need.

#### *Discussion*

In response to several questions on calculating the sum insured and possible limits, Mr Vos reiterated the importance of good farm record keeping for the various calculations methods applied by the insurance industry. In doing so, the loss adjuster calculates the loss and therefore does not set the insured level. The insurance company evaluates whether it is a good risk to insure. The company assesses the quality of management, equipment and bookkeeping, *inter alia*, and decides the level of the risk that it is willing to carry. A broker can be contacted to identify additional insurance companies if the first insurer is not willing to cover the entire risk.

Mr Vos supported a structured, layered risk management system such as the *hybrid insurance* model presented to the workshop for consideration, which is based on developing aquafarmer mutuals as the first level of insurer. He added that the key will be grouping fish farmers with similar features and systematically making sure that BMPs are applied. Re-insurance companies could go beyond the level that the mutuals would be able to cover themselves.

Mr. Secretan commented that one of the most important management practices is keeping accurate records of stock and that good accounting practices are required when calculating mortality.

On the topic of strengthening relations between fisheries authorities and veterinary authorities in Asia, Mr Vos underlined that a strong and correct veterinary support is crucial to the insurer.

Concerns were raised about the fact that, with few exceptions, Asia has not entered into aquaculture insurance at any significant level despite the presence of many other types of agriculture insurance programmes in the region. Mr. Secretan explained that aquaculture is a highly specialized, high-risk business. It has a long history of insurance companies entering the arena and suffering massive losses. It is important to show the insurance companies that they can actually make a profit and that it is worth their effort to transfer the facilities developed in Europe and other regions to Asia.

Mr Vos added that, for the insurer, fish farming differs greatly from livestock farming because there are many more individual animals at risk, for instance, from disease. Insurance would need to take this into serious consideration.

Mr Vos said that the government could indeed subsidize premiums, but would then need to take into consideration the wrong signals and incentives that it may send to the insured and its negative effects on establishing a commercially sustained insurance programme. He added that an alternative could be to subsidize mutuals in order to keep the funds within the insurance system/model. Fair prices of premium are important, however. The calculation of premiums is based on risk exposure and the costs for offering the insurance.

*viii. Aquaculture insurance in China, by Miao Weimin, Freshwater Fisheries Research Centre of the Chinese Academy of Fishery Sciences, Wuxi*

The presentation aimed to provide an overall picture of the present status of aquaculture insurance in China. The need to develop aquaculture insurance is clear from the analysis on the importance of the industry and risks faced by aquaculture farmers.

Current aquaculture insurance practices are pushed by government efforts to safeguard the interest of aquafarmers and promote sustainable development of the industry. Prospects of aquaculture insurance development in China are currently being analysed. It is expected that a significant expansion of insurance coverage of aquaculture will take place in the next five to ten years with strong support from the government. A holistic approach to promote the development of aquaculture insurance in China through joint efforts from the government, insurers and farmers' organizations is required. Constraints to aquaculture insurance development were identified and discussed, which include:

- high risks for commercial insurance companies caused by a relatively high loss ratio;
- affordability of insurance premium to small farmers;
- profitability of aquaculture insurance from the point view of commercial operations;
- technical complexity in loss (particularly stock) assessment; and
- lack of capable aquaculture insurance brokers and claim settling agents.

It is important that balanced strategies to promote the development of aquaculture insurance in China are developed. The government places emphasis on the protection of farmers exposed to high risk in aquaculture business, which might oppose the interests of commercial insurance providers.

*ix. Aquaculture insurance in India, by M.A. Upare, former General Manager, National Bank for Agricultural and Rural Development (NABARD)*

India ranks second to China in aquaculture production. Five public sector insurance companies in principle provide insurance for two categories of aquaculture production, shrimp and fish farming. The amount of insurance premium collected in 1990 was

US\$96 000, decreasing from US\$354 000 in 1994. In 1994, insurance companies incurred huge losses due to white spot disease in shrimp. As a result, insurance companies lost interest in aquaculture insurance. Risks and perils facing the aquaculture industry in India and the processes for loss adjustment and claims settlement were discussed. These negative experiences are a serious impediment to initiating new discussions with insurance companies in the country. Nonetheless, the need was seen to revive aquaculture insurance by developing appropriate insurance products and suitable mechanisms for promoting aquaculture. An international organization may consider the merits of a pilot project to test the proposed hybrid approach, as discussed during the workshop.

#### *Discussion*

Concern was raised that the insurance buyer had been ignored throughout the various presentations that focused largely on the insurance supply side. Without proper attention to the demand side and sufficient buyer interest, no insurance programme can be developed or prosper.

Mr. Secretan said that it would be practically impossible to get insurance companies interested in the sector if they cannot see any profit to be made. He added that the insurance industry cannot provide insurance for the social needs of the farmers – this is the responsibility of government. Insurance companies are selective in terms of which farmers they take on in their schemes. A mechanism is needed for bringing together insurance companies and governments; the hybrid approach to insurance might be a solution.

- x. *Aquaculture insurance in the Philippines: status and constraints, by Nelson A. Lopez, Chief, Inland Fisheries and Aquaculture Division, Bureau of Fisheries & Aquatic Resources, the Philippines*

The presentation gave a historical account on how an enabling law specific for aquaculture insurance was formulated in the Philippines in 2001 through Fisheries Administrative Order No. 215. This law mandated the Philippines Crop Insurance Corporation (PCIC), in collaboration with the Bureau of Fisheries and Aquatic Resources (BFAR), to formulate guidelines for adapting insurance in aquaculture covering fishponds, fish pens and fish cages of shrimp, milkfish and tilapia, as well as seaweed farming. Fisheries Administrative Order 215 was made into law in 2001, but has not been implemented. This is due to failures in obtaining access to government funding and the lower priority given to fisheries and aquaculture than to crops and livestock because of the difficulties and complexities in accounting and the high risks to the industry from typhoons and frequent fish kills.

It is recommended to sectoral stakeholders to pursue insurance at the small-farmer level by integrating BMPs (as a prerequisite) and to provide insurance as an incentive for aquafarmers to organize into cooperatives or associations. Another recommendation is to pilot-test the programme in selected areas of the country jointly with donors such as the Asian Development Bank and the Land Bank of the Philippines and with support agencies such as Philippines Crop Insurance Corporation and the Agricultural Credit Policy Council (ACPC).

#### *Discussion*

Questions were raised on a certification/licensing system for aquafarmers in the Philippines. Mr. Lopez replied that such a system exists and that farms without licences are considered illegal. The need to have control over who farms is important; hence the obvious need for a good licensing system. Mr. Weimin informed the participants that such a system is in the process of being developed in China, but is not yet in effect.



It was observed that although most Asian countries do have a licensing system, the application of the current license system is not adhered to in many cases.

Mr. FungeSmith added that there are often similarities among countries in licensing systems and their legal basis for aquaculture; implementation and compliance with the laws and regulations are different, however. Governments need to efficiently assume full responsibility for licensing. A positive trend is that government control measures are increasingly effective.

### ***B. Summary of plenary discussions on working group reports***

Working Group 1 discussed the constraints to and opportunities for small-scale aquaculturists in implementing the *Proposal for meeting insurance and risk management needs in developing aquaculture in Asia*, which was provided as a working paper for the workshop. The discussion of Working Group 1 centered on the relevance of classifying small-scale farmers into two groups, one of which was likely to have higher demand for insurance than the other. It was agreed that the small-scale farmers who have made little or no significant investments in aquaculture may still require access as a group (i.e. clusters or cooperatives/associations) to aquaculture insurance services. Examples from Iran and Indonesia were cited in this respect.

Working Group 2 discussed the possible alternatives to the proposed hybrid approach described in the *Proposals for meeting insurance and risk management needs in developing aquaculture in Asia*. One of the discussion points related to a recommendation to governments to encourage them to put more effort into creating an enabling environment for aquaculture insurance development. Governments should set aside funds for large-scale or extraordinary disasters that cannot be covered by private sector insurance. With regard to the role of NGOs in establishing and operating aquaculture insurance schemes for small-scale farmers, it was noted that they could also function as service or business correspondents, providing cost-effective intermediary services for the insurers, although this excluded adjusting losses, which is a highly specialized task.

Working Group 3 focused on possible implementation strategies and mechanisms required for the *hybrid approach proposal* and recommended the inclusion of a stop activity point in the process. This point would become relevant when it is clear that there is no interest in the aquaculture insurance market for the hybrid approach.

Recent developments in Japan were discussed with regard to the privatization of government-run insurance schemes for the agriculture and fisheries sector. The steps proposed by Working Group 3 with respect to the process of establishing and piloting the hybrid approach were agreed. It was also suggested that a follow-up workshop be organized in two years' time to monitor progress towards the set objectives and the recommendations made at this workshop, particularly the achievements made in the implementation of the hybrid approach in some countries in Asia.

The working group reports can be found in section III of this report.

It was agreed to incorporate the working group discussions for the Regional Workshop on the promotion of Aquaculture Insurance in Asia into the background document, *Proposals for meeting insurance and risk management needs in developing aquaculture in Asia*. The final document was entitled *Guidelines for action to meet insurance and risk management needs in developing aquaculture in Asia*.

The *Workshop conclusions and recommendations*, as detailed in the following section II of this report, were officially endorsed by workshop participants.

## **II. CONCLUSIONS AND RECOMMENDATIONS**

With about 11 million aquaculturists, the Asian region has the largest number of aquaculture farmers in the world. Of these, the predominant operations are small- and medium-scale. In 2004, 91 percent of the world's total aquaculture production in

volume was generated in Asia. The value of Asian aquaculture production in the same year was about US\$57 billion. Further, the Asian aquaculture sector showed average annual growth rates of 7.7 percent in value terms.

The Regional Workshop on the Promotion of Aquaculture Insurance in Asia, held in Bali, Indonesia from 30 April to 2 May 2007, recognized that aquaculture insurance is likely to be attractive to farmers whose aquaculture operations are their principal form of livelihood and in which the family or operator has invested significant livelihood assets (time, labour, infrastructure and funds). It was noted that the aquaculture insurance schemes in Asia do not presently cover small-scale aquaculture. There is currently high uncertainty over the viability of aquaculture insurance in the small-scale aquaculture sector. In this regard, the workshop concluded that a *hybrid approach*<sup>3</sup> would be the most suitable approach for the region to develop schemes accessible to groups or clusters of medium- and small-scale aquaculture producers.

In recognition of the above, the participants endorsed the following recommendations of the Regional Workshop:

Governments in the region are encouraged to:

- contribute to the establishment of aquaculture insurance schemes by providing an enabling environment (legal and policy frameworks) and to consider appropriate social coverage for risks that cannot be covered by the insurance sector;
- engage with the insurance industry, other public and private bodies, and clusters/groups of small-scale farmers in the development and implementation of a “hybrid approach”, which is considered suitable for aquaculture insurance development in support of small-scale aquaculture in the region;
- continue to provide an enabling environment for increasing the degree of adoption of BMPs in aquaculture to facilitate sustainability and reduce production-related risks;
- work closely with the aquaculture sector in quantifying risks and developing effective mechanisms for their mitigation.

The insurance sector<sup>4</sup> is encouraged to:

- initiate the establishment of an AAIP<sup>5</sup>, which will serve as a market facility for the provision of aquaculture insurance services to the region;
- assist in creating awareness and facilitating capacity building for the establishment of mutuals and other insurance schemes. Such schemes would spread the risks related to smaller disasters that affect some but not all participants in the scheme.
- Actively engage with governments in seeking ways to apply the “hybrid approach” to aquaculture insurance, which can address the needs of medium- and small-scale aquaculture operations.

The workshop recognized the need for FAO, intergovernmental organizations such as NACA, and other relevant international or regional agencies and development banks to continue to support, and participate and invest in the development of insurance for small-scale aquaculture in Asia.

### Agreed follow-up activities

The workshop participants agreed to continue: communicating on new developments in aquaculture insurance and related issues in their countries; inform each other of legal and policy developments at the national level; consolidate information on current mutual schemes in their countries with the national insurance regulators; and

<sup>3</sup> The *hybrid approach* is described in detail in *Guidelines for action to meeting insurance and risk management needs in developing aquaculture in Asia*, which was produced by the Regional Workshop.

<sup>4</sup> The sector comprises direct- and re-insurers, brokers, risk management experts and loss adjusters, etc

<sup>5</sup> The nature and purpose of the A.A.I.P. is broadly discussed in *Guidelines for action to meet insurance and risk management needs in developing aquaculture in Asia*, currently being redrafted to incorporate relevant information from the workshop.



identify suitable groups or clusters of aquaculture farmers to test the hybrid approach. They also agreed to inform their supervisors and relevant national government authorities of the outcomes of the Regional Workshop and to provide feedback to the secretariat on the responses obtained. Participants from India, Nepal, Indonesia and Malaysia expressed the willingness of clusters or other groups of farmers in their country to take part in the pilot activities to test the hybrid approach; in this respect, they promised to provide the secretariat and the insurance representatives with detailed information on these groups of farmers in order to facilitate the identification process. The workshop participants also agreed to try to organize a second workshop on the same subject in approximately two years and to discuss any progress made, particularly the experiences in providing insurance to small-scale aquaculturists through the AAIP.

### III. WORKING GROUP REPORTS

Following the overview and background papers, thematic presentations and industry experiences, the workshop focused on the proposal for meeting insurance and risk management needs in developing countries in Asia. The proposal was developed as a working paper for the workshop. Three issues related to the proposal were examined, namely, constraints and opportunities for small-scale aquaculturists in implementing the proposal, possible alternatives to the proposed *hybrid approach* and possible implementation strategies and mechanisms required for the proposal. To undertake the task, the participants organized into three working groups, each group taking up one of the three issues for discussion. The following are the working group conclusions and suggestions.

#### Working Group 1 (WG1): Constraints and Opportunities

For the purposes of the discussion, the group provided a general description of small-scale aquafarmer operations as being typically family-owned, not formalized into business operations, and having a small economic turn-over.

The group identified two sub-groups: (i) small-scale farmers with no significant investment in assets (infrastructure) or little investment of the operational-type costs (meaning mainly in labour and fish feed); who probably farm fish as one of several livelihood strategies (i.e. aquaculture not being the most significant source of livelihood or income); who are unlikely to require insurance; and whose source of assistance is restricted to government compensations; and (ii) small-scale farmers whose aquaculture operations are a principal form of livelihood in which the family/operator has invested significant livelihood assets (time, labour, infrastructure, finance), and who would likely find insurance an important risk management option.

The second issue addressed by Working Group 1 was how to make insurance products available to small-scale farmers. The discussion recognized the opportunities for using current aquaculture insurance/microfinance schemes in place and considered that insurance products might be added to the portfolio of the micro-credit programmes. It considered a group scheme as a practical implementation arrangement and suggested that farmer groups with similar farming practices could be insured, for example: groups farming similar commodities; having a homogenous scale of farm and practices; following the same cropping calendar; located in the same geographical site; having a common water source; and following a standardized production system. The Working Group identified some good examples of this situation, as follows:

- India: shrimp aquaclubs (same water, same area, implementing BMPs, similar scales);
- Cage culture of tilapia (standardized cage sizes and production methods);
- Iran: trout culture, which is more or less standardized;
- shrimp farmers operating under a franchise scheme.

TABLE 1  
Constraints to aquaculture insurance and possible solutions

Constraints	Suggested approach
1. Inadequate compensation to restart or inadequate compensation. (This refers mainly to public compensation after a disaster or an extraordinary event that impacts the crop or farm.)	Replacement of inputs to restart is not enough – insurance could cover the feed and inputs crop through to its harvest; although this is not a complete compensation, it is adequate to restart and harvest the crop.
2. Lack of understanding of insurance systems and their validity (e.g. insuring the fish against fire would not be realistic!).	General awareness among farmers of the opportunities provided by insurance or demonstrated examples of how it works (pilot projects).
3. Limited ability to objectively assess risks.	Increase understanding and awareness and provide technical assistance to farmers – possible role for the government.
4. Insurance may not be available for water- based structures or constructions that are not classified as “buildings”.	Insurance of infrastructure, which is relatively straightforward for farmers who have invested heavily in facilities, such as hatcheries structures, buildings, boats, land vehicles, cages or pens. Replacement costs vary greatly, sometimes according to the materials used: – pumps and equipment; – concrete tanks (area, type); – bamboo and net cages (area, fixed cost); – earth ponds (costs of reconstruction/re-excavation).
5. Farmer registration and licensing inconsistent and results unreliable – this limits contractual aspects of insurance because the legality of the operation can be contested.	Encouragement of farm registration and licensing; use of the opportunity for insurance or improved coverage/compensation as an incentive for farms to license/register; basic legal framework is a pre-requisite.
6. Farm record keeping is extremely limited in many farms.	Use of BMP approaches to encourage better record keeping; standardized production systems (using BMPs and GAPs allows a more standardized assessment; focusing on homogeneous standardized systems may be beneficial).
7. There are limited data on risks.	Need to improve predictability of farming operations, which can be achieved by standardization-type approaches as applied in many franchise farming operations; this is similar to the BMP approach; major sources of risks are mitigated or reduced through implementation of BMPs (e.g. restriction of stocking density; cropping calendar, feeding protocols; and disease diagnosis, reporting, surveillance and control).
8. There is weak disease surveillance.	Improved basic surveillance, including regular testing to enable improved risk assessment and management.
9. The range of products by insurance companies is limited.	More flexible and tailor-made services for farmers: current products and services for small producers are either not available at all or are not particularly attractive. This would likely improve as the provision of insurance widens and as competition develops.
10. Inability to pay premiums individually.	Use of group insurance under micro-insurance schemes as with crops in some countries; development of reinsurance schemes and pilot testing for wider application.

An issue related to making insurance more attractive to small-scale aquafarmers is the government’s role. Working Group 1 considered that poor and small-scale farmers may not find it necessary to insure their crops with the availability of government compensation and subsidized social insurance schemes. Working Group 1 noted, however, that government compensation never covers 100 percent of the damage and compensation is generally directed at providing the inputs to restart production. This compensation might be a disincentive for farmers to buy insurance.

The group broadly identified some opportunities for insurance in situations where the government compensation is inadequate, such as natural disasters, including cyclones, floods and tsunamis; disease outbreaks; industrial pollution/accidents; and algal blooms.

The discussion on constraints to and opportunities for aquaculture insurance for small-scale farmers identified ten constraints and suggested approaches to resolve them (see Table 1).

### **Working Group 2 (WG2): Possible alternatives to the proposed hybrid approach**

Working Group 2 considered that all three alternatives presented in the proposal make sense depending on the scale of the operation. The group did not present an alternative, but identified the following roles of stakeholders:

The roles of governments:

- Facilitate access. Governments need to work on a legal and policy framework and formulate insurance-friendly legislation.
- Set aside funds for disasters that cannot be accommodated by private sector insurance.
- Endorse insurance products through networks of societies, clubs and cooperatives.
- Invest in the formation of farmer associations or clubs for easier distribution of insurance services and for banks as a conduit through which insurance can access clients.

The role of insurance companies (private and public):

- Develop a framework for cost-effective risk and claims assessment.

The roles of cooperatives, societies and banks:

- Develop, promote and adopt BMPs.
- Aid the development of mutuals.
- Provide credit linkage, which may be required as a mandatory pre-condition.

The roles of NGOs:

- Raise awareness, provide advocacy and capacity building, and organize.
- Act as intermediary, business or service correspondents for the provision of aquaculture insurance to small-scale farmers.

### **Working Group 3 (WG3): Implementation strategies, mechanism and responsibilities**

The group proposed eight step-by step activities, as follows:

#### **1. Approach the aquaculture insurance market to encourage the formation of an insurance facility, tentatively called the AAIP.**

*Steps to be undertaken:*

- a. Support letters for proposed approach by FAO and NACA.
- b. Discussion with at least four international brokers to be conducted by an appropriate agency selected by FAO and NACA.
- c. Prepare feasibility study of establishing and operating a mutual insurance scheme, including drafting of rules and responsibilities, procedures and planning, the latter to be prepared with assistance from international brokers.
- d. Hold discussions with re-insurers willing to partner with FAO and NACA.
- e. Liaison between the agency whose tasks are “b” and “c” above, and the agency whose task is “d”; report on the results of their work to FAO and NACA.

Should the report indicate that the market is interested, proceed to Step 2. Otherwise, the process ends here.

#### **2. Identify production facilities/areas/producer associations that have a good chance of attaining the standards necessary to benefit from insurance.**

*Steps to be undertaken:*

- a. Raise resources to support missions in order to identify the most suitable farmer groups and to establish their basic risk exposures and the distribution of values that need to be insured (by FAO)
- b. Recruit experts (from appropriate organizations from the insurance and aquaculture sectors and from national aquaculture and financial institutions) to carry out joint missions with FAO to identify suitable clusters/farmer groups.

- c. Select suitable farmer groups and preparation of awareness-raising and publicity materials.
  - d. Establish public-private partnerships during missions to bring government agencies on board and get collaboration started.
  - e. Raise awareness of the basic concept of insurance and mutual insurance companies and how they function through national experts with assistance from FAO, NACA, APRACA members, companies with expertise and insurers with interest in providing capacity building interventions for the selected clusters/groups.
3. Collect information on the farming organization and risk profile of clusters/farmers groups or individual farmers using insurance industry standard processes gathered by insurers and brokers.
  4. Submit the information, via the specialist insurance brokers, to the AAIP underwriters.
  5. Commence the risk management inspection and survey process.  
Produce survey report, discuss same and disseminate among interested parties.
  6. Prepare insurance terms by leading underwriters.
  7. Accept insurance terms by the insureds, whether clusters/farmer groups or mutuals.

If all processes experienced positive outcomes, then normal insurance practices, such as issuance of documentation, payment of premiums and survey fees, handling of claims and renewal processes, will fall into place.

## Annex 1

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## Annex 2

# Workshop programme

Day 1	30 April 2007
08.00	Registration
09.00	<p><b>Session I: Opening Ceremony</b>            Chair: Sena de Silva (NACA)            Rapporteur: Raymon van Anrooy (FAO)</p> <p>Welcome remarks:            Director General for Aquaculture, Indonesia            FAO Representative in Indonesia            APRACA Representative            Director General of NACA</p> <p>Introduction of participants</p>
10.00	Break and group photograph of workshop participants
10.30	<p>Background and objectives of the Workshop            (Raymon van Anrooy, Fishery Officer FAOSEC)</p> <p><b>Session II: Background /Overview presentations</b>            Chair: Reza Shah Pahlevi (representing the Director-General,            Aquaculture, Indonesia)            Rapporteur: Susana Siar (FAO)</p>
11.00	Presentation of the background paper, <i>Analysis of the aquaculture insurance industry: lessons learned and opportunities for sustainable development</i> (P.A.D. Secretan, AUMS Ltd.)
11.30	Summary presentation of the FAO report <i>Livestock and aquaculture insurance in developing countries: a brief overview</i> (Ake Olofsson, FAO)
12.00	Lunch
13.30	Discussion and sharing of general experiences
	<p><b>Session III: Thematic presentations</b>            Chair: Maroti Upare (NABARD)            Rapporteur: Simon FungeSmith (FAO)</p>
14.15	<i>Linkages between credit and insurance</i> , by Ms Susana Siar (FAO)

- 14.45 *Experiences on Better Management Practices (BMPs) in selected countries in Asia*, by Pedro Bueno (NACA)
- 15.15 Break
- 15.30 *Aquatic animal health and insurance*, by Melba Reantaso (FAO)
- 16.00 *Role of rural and micro finance institutions in developing and promoting aquaculture insurance in Asia*, by Ramon Yedra (Representative of APRACA/ Deputy Executive Director Agricultural Credit Policy Council, Philippines)
- 16.30 Discussion
- 17.30 End of Session
- Day 2**      **1 May 2007**
- Session IV: Presentation of Insurance Industry Experiences  
Chair: P.A.D. Secretan (AUMS ltd)  
Rapporteur: Ake Olofsson (FAO)
- 09.00 Industry presentations:
- Aquaculture in Asia and loss adjusting principles*,  
by Mark Vos (Country Manager, Netherlands,  
Global product coordinator aquaculture loss adjusting  
Crawford & Co.)
- 09.30 Country experiences and prospects:
- NABARD, India*, by Maroti Upare (former Director-General,  
NABARD)
- 10.00 Break
- 10.15 Country experiences and prospects:
- China*, by Miao Weimin (Freshwater Fisheries Research Centre)
- Philippines*, by Nelson A. Lopez (Bureau of Fisheries and Aquatic Resources)
- 11.15 Discussions
- 11.45 Organization of Working Group tasks and reporting mechanism to plenary, by Raymon van Anrooy (FAO)
- 12.00 Lunch
- Session V: Working group session**  
Chair: Mark Vos (Crawford & Co. Ltd.)  
Rapporteur: Melba Reantaso (FAO)



- 13.30      **Working Group 1:** Discuss **constraints to and opportunities for small-scale aquaculturists** of implementing the *Proposals for meeting insurance and risk management needs in developing aquaculture in Asia*
- Working Group 2:** Discuss **possible alternatives** to the proposed hybrid approach as laid out in the *Proposals for meeting insurance and risk management needs in developing aquaculture in Asia*
- Working Group 3:** Discuss the possible **implementation strategies and mechanism** required for the *Proposals for meeting insurance and risk management needs in developing aquaculture in Asia*
- 15.30      Coffee break
- 16.00      Continuation of Working Group sessions
- 16.30      Presentation of Session V Working Group reports
- 17.30      Plenary discussions
- 18.00      Break
- Day 3      2 May 2007**
- 06.30–12.30    Field visit (combination of culture and aquaculture/fisheries) organized by host institution
- 30.30      Lunch
- Session VI: Conclusions and Recommendations  
             Chair: Pedro B. Bueno (NACA)  
             Rapporteur: Michael J. Phillips (NACA)
- 14.00      Discussion of follow-up activities to increase availability and access to insurance services for small-scale and poor aquaculturists in Asia
- 15.00      Workshop conclusions and recommendations
- 16.00      Closing activities



## Annex 3

# Opening speeches

**Host Government**  
**Dr Made Nurdjana**  
**Director General for Aquaculture**  
**Indonesia**

It is a great pleasure and honour for me to deliver the Opening Address at this Regional Workshop on the Promotion of Aquaculture Insurance in Asia, jointly organized by the Food and Agriculture Organization of the United Nations (FAO), the Network of Aquaculture Centers in Asia-Pacific (NACA), Asia-Pacific Rural and Agricultural Credit Association (APRACA) and the Directorate General for Aquaculture, Indonesia. I wish to take this opportunity to congratulate FAO, NACA and APRACA for their concern in Indonesian mariculture development, and to welcome you all to Indonesia.

World fish supply still comes mostly from capture fisheries; however, the marine resources in many countries, including in Indonesian territorial waters, are reported to have been overexploited. The Indonesian Commission of Stock Assessment in 2002 reported that the maximum sustainable yield (MSY) of fisheries in Indonesian territorial waters has decreased from 6.18 million tonnes per year to 6.01 million tonnes per year. This trend threatens the sustainability of fisheries supply. Moreover, in recent years, fishing activities have been intensifying. In line with the increasing demand for animal protein from aquaculture, there are some factors to be improved to ensure its sustainability, social acceptability and human health and safety.

Furthermore, there are many other issues that potentially inhibit the growth of aquaculture. One is that aquaculture is often viewed as a high-risk business. Major risks include loss of or damage to assets such as production assets. Specific risks that affect both capture fisheries and aquaculture are: pollution of water bodies by other industries/sectors (including agriculture), illegal, unregulated and unreported (IUU) fishing practices; fish stocks and biodiversity; genetic pollution; and spread of disease (through escapes of fish from cages or ponds or introduction of a pathogen). Other risks could include conflicts with other resource users. Both modern and traditional aquaculture systems are fraught with these kinds of risks. Various forms of risk management measures include better farm management practices, the introduction of codes of practice, and certification. Risk management approaches related to processing products of the sector include HACCP, ISO, GMP and other certification schemes.

Insurance is one way of mitigating some of the risks involved, although insurance alone is no substitute for good production practices. It has an important role to play, particularly as a mechanism for removing residual risk that cannot be covered by on-farm and other actions. As such, it is widely considered an important tool in risk management; however, many areas are not covered by insurance services. At present, very few aquaculture installations (cages, ponds, raceways, etc.) and stocks are insured. Indeed, in Indonesia, the insurance sector as a whole is underdeveloped, although there has been strong growth in recent years. This picture is not uncommon across our region.

Previous events, such as the Regional Conference on Insurance and Credit for Sustainable Fisheries Development in Asia, organized in Tokyo, Japan in November 1996

and the Regional Workshop on Guidance for Credit and Microfinance Programmers in Support of the Sustainable Use of Inland Fisheries Resources and Poverty Alleviation, held in Beijing, China in February 2006, have clearly demonstrated the need to provide specific insurance products tailored to the aquaculture sector.

One important issue is whether the small-scale aquaculture sector can provide a significant volume of business that is attractive to insurers, a condition being that small aquafarms are worth insuring. This gives rise to the important question of how the status of worthiness might be attained and whether insurance itself might also be a tool to encourage small aquafarmers to take up good aquaculture practices that ensure crop success and profitability. To address the above problems, challenges and issues, strong collaboration among Asia-Pacific countries is required.

This workshop has four main goals: to raise awareness among policymakers of the positive aspects and limitations of insurance as a risk management tool, including safe and remunerative savings and deposits facilities that might be more attractive and suitable alternatives and/or complements for small-scale aquaculturists; to improve awareness regarding the aquaculture sector within the insurance industry and illustrate its potential to become a profitable business segment; to discuss ways and means of supporting aquaculture development through the use of insurance; and to reach a consensus with regard to the draft *Guidelines for insurance in support of aquaculture development in Asia*.

Important points needing further discussion include: constraints to establishing insurance programmes, such as high administration costs for the insurance companies due to small and dispersed farmers, poor infrastructure and limited ability of fish farmers to pay premiums; and ways in which insurance can contribute to improving livelihoods, an important issue in Indonesia where a key goal of the aquaculture programmes is poverty alleviation.

In addition to the *Guidelines* and other findings, and the closer relationships that I am sure will develop during this event, I hope that this workshop will also provide ideas and suggestions for further actions by all parties, at the local, national and regional levels.

I believe that this workshop will contribute towards the development of mariculture that is ecologically and socially sustainable, and will be able to make a major contribution to ensuring food security in Asia and, indeed, across the world. I hope that all participants will have the opportunity to enjoy beautiful Bali, in addition to all your hard and dedicated work during the workshop.

Once again, I would like to extend my sincere gratitude to all participants, FAO officials and NACA staff as well as the staff of the Directorate General of Aquaculture, whose contributions have made this event possible.

I hope that the cooperation, communication and good relationships between all participants, especially with FAO, NACA, and APRACA, will continue and prosper in the future.

Thank you very much for your kind attention.

**FAO**  
**Mr Man Ho So**  
**FAO Representative to Indonesia**

I am very pleased to welcome you on behalf of the Food and Agriculture Organization of the United Nations (FAO) at this Regional Workshop on the Promotion of Aquaculture Insurance in Asia. We are very grateful to the Directorate-General for Aquaculture of Indonesia and NACA for their excellent work in the preparation of this important event here on the beautiful island of Bali.

In the light of the recent disasters that struck the population of Indonesia and other countries in Asia, such as the Tsunami in December 2004, recent earthquakes and floods, it is of major importance that tools are developed and improved that will reduce risks, enable people to better cope with disasters, and allow them to better manage their risks. Insurance is an important tool in common-day risk management and is used by most of us. Many of us have car insurance, health and life insurance, sometimes property insurance and others. However, insurance is less common in agriculture and fisheries.

This Regional Workshop is aimed to increase awareness on the opportunities that insurance can provide for the sustainable development of the aquaculture sector in the region, and to bring together government officials, the insurance industry and aquaculturists to discuss and develop mechanisms to further improve the provision of insurance services to the sector.

Let me take this opportunity to briefly present to you the activities of FAO. I assume that most of you have heard of us; maybe you have come across some FAO projects in the field or you have visited our website. You might have seen the breath and depth of our FAO documents and online databases; however, FAO is more than that.

FAO is **the** organization of the United Nations with a mandate in rural development and food security. Achieving food security for all is at the heart of FAO's efforts – to make sure people have regular access to enough high-quality food to lead active, healthy lives. FAO aims to raise levels of nutrition, improve agricultural and fisheries productivity, better the lives of rural populations and contribute to the growth of the world economy.

FAO in Indonesia is working closely together with the local population, the Government, NGOs and donors towards the aims that I just mentioned. We have been active in emergency assistance, rehabilitation and development activities following the Tsunami and other disasters that hit the country, and we provide technical assistance in many sectors and subjects. Our activities in the field of Avian Influenza disease surveillance and response need special mention. In fisheries and aquaculture sector-related interventions, we have dozens of staff working in Aceh to help rebuild the livelihoods of poor coastal fishers.

FAO's Fisheries and Aquaculture Department aims to promote long-term sustainable development and utilization of the world's fisheries and aquaculture and to contribute to food security. The Department has three main pillars of work:

First – promoting responsible fisheries sector management at the global, regional and national levels, with priority given to the implementation of FAO's Code of Conduct for Responsible Fisheries, the FAO Compliance Agreement and various International Plans of Action. Particular attention is paid to the problem of excess capacity, combating Illegal, Unreported and Unregulated Fishing and providing advice for the strengthening of regional fisheries bodies.

Second – increasing the Contribution of responsible fisheries and aquaculture to world food supplies and food security.

Third – Global Monitoring and Strategic Analysis of Fisheries. Priority here is given to the gathering of fisheries data, development of databases, analysis of information and dissemination of information. I believe that all of you have found copies of some of our publications in your welcome package.

Having said this, a fair question is why FAO is organizing this Regional Workshop with regional partners. The answer is: we believe in cooperation, networks and partnerships to address together the needs of developing countries and particularly the people in rural areas that depend for their livelihoods on agriculture and fisheries, including aquaculture. This workshop provides FAO with an opportunity to increase awareness among line ministries, the insurance industry and the aquaculture sector in Asia on what the Organization is doing in the field of aquaculture insurance and

risk management, and to promote developments in areas related to supporting the implementation of the FAO Code of Conduct for Responsible Fisheries.

I should like to end this short welcome statement by thanking NACA, and particularly the assistance of Mr Pedro Bueno and Ms Wella Udomlarp, for their efforts in making this Workshop possible. I hope that the workshop will be fruitful and bring interesting new views and ideas to all of us. Enjoy the presentations and working group sessions! Thank you for your attention.

### **Asia-Pacific Rural and Agricultural Credit Association (APRACA)**

**Mr Donato Endencia**

**Vice President, Land Bank of the Philippines**

On behalf of the Asia-Pacific Rural and Agricultural Credit Association and the Centre for Training and Research in Agricultural Banking, I am pleased to also welcome you to this Regional Workshop on Promoting Aquaculture Insurance in Asia.

APRACA is delighted and honoured to be a partner of FAO, NACA and the Indonesian Directorate General of Aquaculture of the Ministry of Marine Affairs and Fisheries. There is no doubt that aquaculture insurance is a pressing concern in the region as governments and support institutions try to intensify their collective efforts towards improving the lot of small aquaculture farmers.

Fisheries finance and development is included in APRACA's six-item agenda for the medium term. In many Asian countries, small and poor aquafarmers constitute a sizeable portion of the rural population. Poverty incidence in the sector remains at a significant level. Efforts to reach these small aquafarmers and help them improve their access to financing continue to elude policymakers and practitioners, given the usual risks and the difficult environment associated with fisheries financing. For this reason, APRACA has been actively supporting and documenting best practices and success cases to inform financing strategies for this sector. Insurance as a credit risk management mechanism plays a pivotal role. APRACA constantly encourages its member institutions to actively collaborate with like-minded partners in pilot testing, and replicating and expanding tested schemes that show high levels of efficiency, effectiveness and sustainability.

The prospects of aquaculture insurance seem bright. But much more needs to be done to translate options, concepts and designs into action with a high and positive impact. Concrete action that reflects pro-active response to small farmers' needs must be implemented on the field, closely monitored, supported and then institutionalized. The role of international development organizations such as FAO and NACA is critical in nurturing these initiatives into meaningful and significant performance.

Let us join hands in pursuing this important activity, but without forgetting to enjoy the beauty of these islands as we carry out this serious task. Good morning.

### **Network of Aquaculture Centres in Asia-Pacific**

**Prof Sena De Silva**

**Director General**

Let me welcome you to this Regional Workshop on the Promotion of Aquaculture Insurance in Asia. With your permission, in particular for those that are not familiar with NACA, let me briefly inform you about the Network. NACA is an intergovernmental organization of 17 nations in Asia. We work very closely in cooperation with FAO and many other regional and national organizations. Our primary mandate is ensuring

sustainability in aquaculture, and improving and safeguarding the livelihoods of small-scale farmers.

Aquaculture insurance in Asia is not established as much as it should be, particularly in view of the fact that over 80 percent of production comes from the region. This workshop brings together insurers, bankers and other financial institutions face to face with aquaculture developers and planners drawn from the governments of the region. This is the first gathering of this nature in the region. This would give the opportunity for the financiers and insurers to understand the problems facing producers and, it is hoped, better understand the modus operandi of the aquaculture sector in Asia, which is different from nations in the developed world. Asian aquaculture, consisting of many small-scale enterprises, I believe, presents a different challenge and set of issues to insurers and bankers. I hope that this forum will provide an opportunity to start the process of introducing aquaculture insurance to small-scale farmers; perhaps not very different to other sectors. I wish the workshop success.

I would like to thank the Indonesian Government, our own staff and FAO for making this event a reality.