

## **Livestock And Aquaculture Insurance In Developing Countries Fao Agricultural Services Bulletins**

This book on the economics of livestock disease insurance is organized into three major parts. Following an introduction (chapters 1-2), part II (chapters 3-8) includes a variety of discussions about what is known about how to build a livestock insurance programme. It begins with a look at the conceptual basis for government involvement in the management of livestock diseases, including prevention, control, regulation and eradication. This discussion is picked up by looking at incentive compatibility and insurability conditions in the private sector, emphasizing how livestock disease management is unique. Compensation is also examined, including what losses should be compensated, choosing a method to value the losses, determining the portion of losses to compensate, and outlining a potential role for insurance. Finally, the complexity of the risks at the farm level is demonstrated using a model that evaluates revenue insurance. Part III (chapters 9-20) offers a diverse discussion about disease management issues and programmes in Australia, Canada, Europe and the USA. These chapters include more discussion about how to build economically sound insurance programmes, and observations are based on modelling or observing case studies. The book has a subject index.

Governments in developing countries have been increasingly involved in the support of agricultural (crop and livestock) insurance programs in recent years. In their attempts to design and implement agricultural insurance, they have sought technical and financial assistance from the international community and particularly from the World Bank. One of the recurrent requests from governments regards international experience with agricultural insurance, not only in developed countries, where in some cases agricultural insurance has been offered for more than a century, but also in middle and low-income countries. Governments are particularly interested in the technical, operational, financial, and institutional aspects of public support to agricultural insurance. 'Government Support to Agricultural Insurance' informs public and private decision makers involved in agricultural insurance about recent developments, with a particular focus on middle- and low-income countries. It presents an updated picture of the spectrum of institutional frameworks and experiences with agricultural insurance, ranging from countries in which the public sector provides no support to those in which governments heavily subsidize agricultural insurance. This analysis is based on a survey conducted by the World Bank's agricultural insurance team in 2008 in 65 developed and developing countries. Drawing on the survey results, the book identifies some key roles governments can play to support the development of sustainable, affordable, and cost-effective agricultural insurance programs.

Aquaculture Health Management: Design and Operation Approaches is an essential reference for the diverse aquaculture community. With the steadily increasing importance of healthy fish production and the expansion of the animal aquaculture industry to new geographic areas, new microbial and parasitic species with pathogenic potential continue to emerge. The book covers the broad spectrum of fish and shellfish health, the functional roles of pathogen emergence, and the impacts of nutrition and preventative medicine such as pre- and probiotics, as well as chemical treatments, relevant legislation and more. This reference takes a comprehensive approach to understanding overall fish health management, making it valuable to aquaculturists, practitioners in aquatic animal health, veterinarians and all those in industry, government or academia who are interested in aquaculture and fisheries and their sustainable futures. Presents the biosecurity measures used to prevent the spread of disease Discusses fish immunology to help readers understand preventive medicine for a healthy fish production Examines the latest scientific methods and technologies to maximize efficiencies for healthy fish production for farming Includes the most commonly researched fish, crustaceans and mollusks in aquaculture

A brief introduction to the role of insurance as a risk management mechanism in livestock and aquaculture enterprises, exploring some of the complexities involved in the financial mechanism for risk sharing.

Agricultural Insurance Market in the Caribbean

Livestock's Long Shadow

Strategies for Crop Insurance Planning

Policy Options for Agriculture Insurance

Risk management practices of small intensive shrimp farmers in the Mekong Delta of Viet Nam

*The use of drugs in food animal production has resulted in benefits throughout the food industry; however, their use has also raised public health safety concerns. The Use of Drugs in Food Animals provides an overview of why and how drugs are used in the major food-producing animal industries--poultry, dairy, beef, swine, and aquaculture. The volume discusses the prevalence of human pathogens in foods of animal origin. It also addresses the transfer of resistance in animal microbes to human pathogens and the resulting risk of human disease. The committee offers analysis and insight into these areas Monitoring of drug residues. The book provides a brief overview of how the FDA and USDA monitor drug residues in foods of animal origin and describes quality assurance programs initiated by the poultry, dairy, beef, and swine industries. Antibiotic resistance. The committee reports what is known about this controversial problem and its potential effect on human health. The volume also looks at how drug use may be minimized with new approaches in genetics, nutrition, and animal management. November*

*Agriculture is a key sector in Bangladesh, but it is highly exposed to risks. While agriculture is a source of employment and livelihood for nearly one in two adults in Bangladesh and contributes about 16 percent to GDP, it is highly exposed to natural hazards. Indeed, Bangladesh is commonly ranked as one of the most vulnerable countries in the world to natural disasters with agriculture heavily exposed to floods, cyclones, and drought. In 2007, for instance, Cyclone Sidr destroyed 0.69 million hectares of cultivated crop lands and killed over 460,000 head of livestock and poultry. In the past, the government of Bangladesh and development partners have provided substantial support to farmers in the aftermath of large disasters, but this approach has disadvantages in that support is not guaranteed to farmers and may be slow. In the aftermath of Cyclone Sidr, recovery and reconstruction needs were estimated at USD 1.3 billion, or 28 percent of government expenditures. In spite of efforts by the government of Bangladesh, the gap between available funding and needs is often large and can reach more than USD 1.5 billion in bad years (Air Worldwide and ADPC 2014). Bangladesh often relies on international assistance, as over the past ten years, only 33 percent of disaster-related expenses has been met by domestic resources. In addition, disaster relief transfers often take substantial time to reach beneficiaries and require to divert resources away from long term development projects. If the Government of Bangladesh decided to go ahead with support for agriculture insurance, high-level buy-in from a broad range of stakeholders will be necessary, as will partnerships with the private sector. Government may consider: strengthening the overall legal, regulatory, and supervisory insurance environment; developing a centralized database of data for agricultural insurance purposes; provision of financial support to the program, particularly in the early stages of the program; and establishing a dedicated technical team within government with responsibility for implementation and for providing input to policy. One option for consideration would be for some or all of these activities to be carried out through a project with technical support and/or financial assistance of a development partner with adequate expertise in this field, such as the World Bank Group.*

*Herders in Mongolia have suffered tremendous losses in recent dzud (winter disasters), with livestock mortality rates of over 50 percent in some locales. This study examines the feasibility of offering insurance to compensate for animal deaths. Such an undertaking is challenging in any country. Mongolia offers even more challenges given the vast territory in which herders tend over 30 million animals. Traditional approaches that insure individual animals are simply not workable. The opportunities for fraud and abuse are significant. Monitoring costs required to mitigate this behavior would be very high. This study focuses on the potential for using the livestock mortality rate at a local level (for example, the sum or rural district) as the basis for indemnifying herders. Applications of index insurance are growing around the world, although no country has so far implemented such insurance for livestock deaths. But few countries have such frequent and high rates of localized animal deaths as does Mongolia, and it is one of the few countries that perform an animal census every year. This concept may therefore be precisely what is needed to start a social livestock insurance program. Just as important, the insurance that is used in Mongolia should not interfere with the exceptional efforts that experienced herders take to save animals during severe weather. Using an individual insurance may, in fact, diminish these efforts. Herders may ask, "Why should I work so hard to save my animals if I will simply be compensated for those that are lost?" Since the index insurance would pay all herders in the same region the same rate, the incentives for management to mitigate livestock losses remain strong. No one would reduce their effort to collect on insurance. Those who increase their efforts during a major event (dzud) would likely be compensated for this effort even though they do not lose livestock. In some cases, they could reasonably expect to receive payments that would compensate for the added effort or the added cost of trying to save their livestock. This paper--a product of the Rural Development and Natural Resources Sector Unit, East Asia and Pacific Region--is part of a larger effort in the region to foster secure and sustainable livelihoods through analytical and operational support for risk management and asset diversification strategies. The work described in this paper is finding operational application under the Mongolia Sustainable Livelihoods Project.*

*Bangladesh is ranked as the world's fifth most exposed country to natural disasters, including floods, cyclones, and droughts. The purpose of this study is to investigate the viability of agricultural insurance in Bangladesh, particularly for small and marginal farmers and to present the Government of Bangladesh (GoB) with a set of options for the future development of agricultural insurance in the country. The current study aims to identify an overall framework for the development of sustainable market-based agricultural insurance in Bangladesh. It also reviews the technical, operational, financial, and institutional issues and options for the introduction of traditional crop and livestock insurance products and for new crop-index products that are suitable to Bangladeshi farmers. This report present a series of practical guidelines and options for GoB and other interested parties to consider for the future development and implementation of crop, livestock and aquaculture insurance in Bangladesh. This study benefits from this international experience (for example, the Indian area-yield and weather-index crop insurance schemes, a Mexican agricultural mutual insurance program, and a Mongolian livestock-mortality index insurance*

*program), which is tailored to the local economic and social context of Bangladesh.*

*Review of the Current State of World Aquaculture Insurance*

*From Insurance to Reinsurance to Capital Markets*

*Agricultural Insurance in Bangladesh*

*Guidelines to Meet Insurance and Other Risk Management Needs in Developing Aquaculture in Asia*

*Environmentally Sustainable Livestock Production*

*The regional workshop "Development of Aquaculture Insurance System for Small-scale Farmers" 20-21 September 2016, Bangkok, was joined by participants from China, Philippines, Thailand and Viet Nam. It contains two parts. The first aimed at answering the question, "What would make insurance available for and accessible to small-scale farmers?" The second was focused on exploring potential shrimp insurance schemes. The Workshop achieved the following outcomes: (1) made farmers, farmer advisers, researchers and academics more familiar with the business and technical requirements of insurers, (2) made insurers become more familiar with the circumstances and needs of farmers, (3) confirmed that insurers continue to view aquaculture as a high-risk industry, (4) highlighted the need to incorporate risk assessment and management in the development of better farm management practices in line with the requirements of insurance, and (5) confirmed the usefulness of bundling financial products in the development of institutional services for farmers.*

*The objective of the Agricultural Insurance pre-feasibility study is to identify the institutional, operational, technical and financial challenges for the development of agricultural risk transfer solutions and insurance for rice, fruit and vegetables, livestock, and the aquaculture sector in Guyana. The specific objectives of the study include: (i) to identify the production systems, constraints and risks faced by farmers in Guyana; (ii) to assess the institutional, operational and financial capacity in Guyana to manage an agricultural insurance scheme for the selected activities; (iii) to evaluate the availability of information and collect technical data and information needed for the development of an agricultural insurance scheme for the selected activities; (iv) to assess the potential interest of the possible stakeholders that might get involved in the development of an agricultural insurance scheme in Guyana. This report draws heavily on international experience. International experience on agricultural insurance is vast, as it is currently being implemented in more than 100 countries around the world. This study benefits from this experience, which has been tailored to the local economic and social context of Guyana.*

*In recent years the livestock sector has been hit by a number of high-profile diseases, such as BSE, Foot and Mouth Disease and Avian Influenza. These have had a devastating economic impact on livestock producers and the broader livestock industry. One key response has been a growing interest in livestock disease insurance. However there is a need for greater understanding of private incentives, market impacts, and public policy perspectives on regional, national and international levels, if livestock insurance products and complementary risk management programmes are to be developed. This book provides a balanced and broad-ranging overview of the economics of livestock disease insurance. It covers both general issues and specific case studies drawn from the USA, Canada, Europe and Australia or focussing on specific issues. The book is unique in addressing this subject and will interest readers in agricultural business and economics, veterinary science and the livestock sector.*

*"The assessment builds on the work of the Livestock, Environment and Development (LEAD) Initiative"--Pref.*

*Improving Data Collection and Measurement of Complex Farms*

*Government Support to Agricultural Insurance*

*Study*

*Advancing the Science of Climate Change*

*The Regulation of Insurance in China*

**Gain a holistic view of agricultural (re)insurance and capital market risk transfer Increasing agricultural production and food security remain key challenges for mankind. In order to meet global food demand, the Food and Agriculture Organisation estimates that production has to increase by 50% by 2050 and requires large investments. Agricultural insurance and financial instruments have been an integral part to advancing productivity and are becoming more important in increasingly globalized and specialized agricultural supply chains in the wake of potentially more frequent and severe natural disasters in today's key producing markets. Underwriting, pricing and transferring agricultural risks is complex and requires a solid understanding of the production system, exposure, perils and the most suitable products, which vastly differ among developed and developing markets. In the last decade, new insurance schemes in emerging agricultural markets have greatly contributed to the large growth of the industry from a premium volume of US\$10.1 billion (2006) to US\$30.7 billion (2017). This growth is bound to continue as insurance penetration and exposure increase and new schemes are being developed. Agricultural (re)insurance has become a cornerstone of sovereign disaster risk financing frameworks. Agricultural Risk Transfer introduces the main concepts of agricultural (re)insurance and capital market risk transfer that are discussed through industry case studies. It also discusses best industry practices for all main insurance products for crop, livestock, aquaculture and forestry risks including risk assessment, underwriting, pricing, modelling and loss adjustment. Describes agricultural production risks and risk management approaches Covers risk transfer of production and financial risks through insurance and financial instruments Introduces modelling concepts for the main perils and key data sources that support risk transfer through indemnity- and index-based products Describes risk pricing and underwriting approaches for crop, livestock, aquaculture and forestry exposure in developed and developing agricultural systems Become familiar with risk transfer concepts to reinsurance and capital markets Get to know the current market landscape and main risk transfer products for individual producers, agribusinesses and governments through theory and comprehensive industry case studies Through Agricultural Risk Transfer, you'll gain a holistic view of agricultural (re)insurance and capital market solutions which will support better underwriting, more structured product development and improved risk transfer.**

Risk management is increasingly gaining attention within the aquaculture sector, as reflected in the development and increasing implementation of better management practices, codes of conduct and codes of good practice, standard operational procedures, certification and traceability. Aquaculture insurance is one of the tools used in the management of risks in aquaculture. This publication provides an overview of the current status of aquaculture stock insurance in the world. Seven syntheses covering Asia, China, Europe, North America, Oceania, South America and sub-Saharan Africa show the specificities of the situation with regard to aquaculture stock insurance. The publication also presents a summary of these syntheses, together with conclusions and clear recommendations at various levels to increase the contribution of aquaculture stock insurance to the sustainable management and development of the aquaculture sector.

These Guidelines are an outcome of a joint FAO, Network of Aquaculture Centres in Asia-Pacific (NACA) and Asia-Pacific Rural and Agricultural Credit Association (APRACA) Regional Workshop on the Promotion of Aquaculture Insurance in Asia, held in Bali, Indonesia, from 30 April to 2 May 2007. The workshop was hosted by the Government of Indonesia, Directorate General for Aquaculture, and attended by policy-makers and international experts from the rural finance, insurance and aquaculture sectors from both the region and elsewhere. The document also contains the Report of the Regional Workshop and two background papers produced for the workshop.

With the rapid development of China's insurance industry and the opening of the Chinese insurance market to the world, Chinese insurance law and regulation has become an increasingly relevant topic for insurance practitioners and academics. The Regulation of Insurance in China therefore provides a much needed analysis of the Chinese regulatory system. This is the first systematic text written in English on the regulation of insurance in China and provides a comprehensive and systematic analysis of rules of law and administrative regulations on China's insurance industry and insurance market, covering four level of regulatory hierarchy - the statutory law, the regulations enacted by the central government (the State Council), the regulations developed by the insurance supervision and regulation authority of the State Council, and self-regulations by the insurance industry. This book is essential reading for insurance companies and legal practitioners looking to do business in China, as well as reference for lawyers practising insurance law. It is also a useful resource for students and academics studying Chinese law.

The World of Organic Agriculture

The Use of Drugs in Food Animals

Livestock in Food Security

Examining the Feasibility of Livestock Insurance in Mongolia

The Economics of Livestock Disease Insurance

"This publication is primarily concerned with risks to arable and horticultural crops, and the applicability of insurance to managing these risks. Its purpose is to provide an introductory crop and forestry insurance. It begins by defining the boundaries for these types of insurance products in order to assist those interested in exploring and exploiting this financial market. It outlines how to proceed with planning for crop insurance within the established boundaries. While recognizing that classic, damage-based and yield-based insurance products account for all crop insurance written globally, the booklet also points out the dynamism of research and development into new insurance mechanisms. It presents two fairly new insurance products based on insuring a level of crop revenue, and the second where insurable damage is determined on the basis of an index derived from data external to the insured farm. While some material is taken from agriculture and forestry in developed countries, the basic target group of readers is expected to be those concerned with crop and forest risk management in the developing countries of the world. This publication will be of interest to farmer unions, producer/commodity groups, processors, marketing firms and others contracting with farmer producers, officials of Agriculture, Planning and Commerce, and bankers and insurers with farming and forestry clients."

The rate of increase in global production of fish and fishery products was forecasted to remain steady, with aquaculture accounting for 53 percent of the fish we eat directly. Viet Nam is one of the top producers and exporters of farmed shrimp. More than 80 percent of the total production comes from small intensive farms, which occupy less than 10 percent of the area devoted to shrimp farming. It is the main source of income for many rural households in the Mekong Delta provinces. This study examines the characteristics of small intensive farms and socio-economic status of the farm households, and farming practices and performance that are associated with the strategies and preferences for managing production risks. The study is based on primary data from a survey of farms raising the whiteleg shrimp (*Penaeus vannamei*) conducted in Bac Lieu, Ben Tre and Ca Mau provinces from September 2017 to February 2018. This book is a printed edition of the Special Issue "Environmentally Sustainable Livestock Production" that was published in Sustainability.

Policy Options for Crop and Livestock and Aquaculture Insurance

Concepts, Issues and International Case Studies

The State of World Fisheries and Aquaculture 2020

World Food and Agriculture - Statistical Yearbook 2021

Challenges and Options for Developing Countries

***This publication offers a synthesis of the major factors at play in the global food and agricultural landscape. Statistics are presented in four thematic chapters, covering the economic importance of agricultural activities, inputs, outputs and factors of production, their implications for food security and nutrition and their impacts on the environment. The Yearbook is meant to constitute a primary tool for policy makers, researchers and analysts, as well as the general public interested in the past, present and future path of food and agriculture.***

**The 2020 edition of The State of World Fisheries and Aquaculture has a particular focus on sustainability. This reflects a number of specific considerations. First, 2020 marks the twenty-fifth anniversary of the Code of Conduct for Responsible Fisheries (the Code). Second, several Sustainable Development Goal indicators mature in 2020. Third, FAO hosted the International Symposium on Fisheries Sustainability in late 2019, and fourth, 2020 sees the finalization of specific FAO guidelines on sustainable aquaculture growth, and on social sustainability along value chains. While Part 1 retains the format of previous editions, the structure of the rest of the publication has been revised. Part 2 opens with a special section marking the twenty fifth anniversary of the Code. It also focuses on issues coming to the fore, in particular, those related to Sustainable Development Goal 14 and its indicators for which FAO is the "custodian" agency. In addition, Part 2 covers various aspects of fisheries and aquaculture sustainability. The topics discussed range widely, from data and information systems to ocean pollution, product legality, user rights and climate change adaptation. Part 3 now forms the final part of the publication, covering projections and emerging issues such as new technologies and aquaculture biosecurity. It concludes by outlining steps towards a new vision for capture fisheries. The State of World Fisheries and Aquaculture aims to provide objective, reliable and up-to-date information to a wide audience - policymakers, managers, scientists, stakeholders and indeed everyone interested in the fisheries and aquaculture sector.**

**Climate change is occurring, is caused largely by human activities, and poses significant risks for--and in many cases is already affecting--a broad range of human and natural systems. The compelling case for these conclusions is provided in Advancing the Science of Climate Change, part of a congressionally requested suite of studies known as America's Climate Choices. While noting that there is always more to learn and that the scientific process is never closed, the book shows that hypotheses about climate change are supported by multiple lines of evidence and have stood firm in the face of serious debate and careful evaluation of alternative explanations. As decision makers respond to these risks, the nation's scientific enterprise can contribute through research that improves understanding of the causes and consequences of climate change and also is useful to decision makers at the local, regional, national, and international levels. The book identifies decisions being made in 12 sectors, ranging from agriculture to transportation, to identify decisions being made in response to climate change. Advancing the Science of Climate Change calls for a single federal entity or program to coordinate a national, multidisciplinary research effort aimed at improving both understanding and responses to climate change. Seven cross-cutting research themes are identified to support this scientific enterprise. In addition, leaders of federal climate research should redouble efforts to deploy a comprehensive climate observing system, improve climate models and other analytical tools, invest in human capital, and improve linkages between research and decisions by forming partnerships with action-oriented programs.**

**Although much has been said about livestock's role in achieving food security, in reality, the subject has been only partially addressed and no current document fully covers the topic. This report is an attempt to fill the gap. It expands the 2009 State of Food and Agriculture (SOFA) section which examined the multiple roles played by livestock in the food security of the poor and advocated for support of smallholders, both in responding to opportunities in livestock production and in finding other opportunities within a broad rural development strategy. Recognizing that food security is central to international development--and to the mandate of the Food and Agriculture Organization of the United Nation (FAO)--the report tells the story of livestock and food security from three perspectives.**

#### **Bangladesh**

#### **Fishery and aquaculture insurance in China**

#### **World Livestock 2011**

#### **World Food and Agriculture - Statistical Yearbook 2020**

**America's farms and farmers are integral to the U.S. economy and, more broadly, to the nation's social and cultural fabric. A healthy agricultural sector helps ensure a safe and reliable food supply, improves energy security, and contributes to employment and economic development, traditionally in small towns and rural areas where farming serves as a nexus for related sectors from farm machinery manufacturing to food processing. The agricultural sector also plays a role in the nation's overall economic growth by providing crucial raw inputs for the production of a wide range of goods and services, including many that generate substantial export value. If the agricultural sector is to be accurately understood and the policies that affect its functioning are to remain well informed, the statistical system's data collection programs must be periodically revisited to ensure they are keeping up with current realities. This report reviews current information and makes recommendations to the U.S. Department of Agriculture's (USDA's) National Agricultural Statistics Service (NASS) and Economic Research Service (ERS) to help identify effective methods for collecting data and reporting information about American agriculture, given increased complexity and other changes in farm business structure in recent decades.**

**FAO Fisheries and Aquaculture Circulars This paper reviews the history and status of fishery and aquaculture insurance in China, covering its organization, implementation mechanisms, policy development, performance evaluation, and innovations. The case studies cover capture fisheries and finfish, crab, shrimp and seaweed farming.**

**The new edition of this annual publication (previously published solely by IFOAM and FiBL) documents recent developments in global organic agriculture. It includes contributions from representatives of the organic sector from throughout the world and provides comprehensive organic farming statistics that cover surface area under organic management, numbers of farms and specific information about commodities and land use in organic systems. The book also contains information on the global market of the burgeoning organic**

*sector, the latest developments in organic certification, standards and regulations, and insights into current status and emerging trends for organic agriculture by continent from the world's foremost experts. For this edition, all statistical data and regional review chapters have been thoroughly updated. Completely new chapters on organic agriculture in the Pacific, on the International Task Force on Harmonization and Equivalence in Organic Agriculture and on organic aquaculture have been added. Published with IFOAM and FiBL Livestock and Aquaculture Insurance in Developing Countries Food & Agriculture Org.*

*Guyana*

*Promoting Access to Small and Marginal Farmers*

*The Financial Sector's Role in Agricultural Transformation*

*Agricultural Insurance in Developing Countries*

*GLOBEFISH Highlights - Issue 1/2017*

This world review of capture fisheries and aquaculture insurance presents the findings of five regional and four national reports conducted in 2020. An estimated 450 000 fishing vessels worldwide are covered by marine hull insurance. Nearly all of the estimated 67 800 large-scale industrial fishing vessels are covered by marine hull insurance, as well as 50-60 percent of the estimated 430 000 semi-industrial fishing vessels. However, over 95 percent of the 2.3 million motorized small-scale fishing vessels operate uninsured. Most small-scale fishers do not have access to adequate insurance services. Between 2009 and 2019, underwriting experiences in fishing vessel insurance were generally reported as "Good". What is more, access to accident, life and health insurance services for crew on fishing vessels and small-scale fishers in developing countries has improved in recent years. In 2020, the number of aquaculture insurance policies in force was estimated at over 40 000 worldwide, with China and Indonesia the largest markets for this type of insurance. While large-scale aquaculture producers are well served by the insurance industry, the provision of insurance is inadequate for medium and small-scale farmers, particularly in Asia. Underwriting experiences for aquaculture stock mortality insurance were reported as "Good" to "Very good" (40 percent), or "Neutral" (36 percent). The insurance industry has consolidated the market and increased profitability in aquaculture insurance. This world review contains information on the capture fisheries and aquaculture insurance market, the prevailing underwriting practices, perils covered, policies in force, risk management and claim handling procedures. Finally, it offers a series of recommendations for increasing insurance service provision to the fisheries and aquaculture industries.

As a key pillar of the Ugandan economy, the agriculture sector is a critical driver of economic growth and poverty alleviation. Uganda's agricultural sector is dominated by smallholders with low levels of productivity. The agriculture sector is highly exposed to co-variant risks, which include weather, biological, infrastructure (post-harvest loss), price, and market risks. This plethora of risks suppresses appetite for investment in the sector. Despite the sector's contribution to the economy, farmers' access to finance remains a major constraint. Recognizing agriculture finance's critical role in the agricultural transformation agenda, the government of Uganda (GoU) is supporting several initiatives to unlock agricultural finance. To manage the financial impacts of production shocks, the GoU seeks to use agricultural insurance to derisk rural lending and expand access to rural credit for smallholders. In partnership with private insurance companies, the GoU launched the Uganda Agriculture Insurance Scheme (UAIS) as a five-year pilot in July 2016. The objectives of the scheme are to ensure that Ugandan farmers are protected against the effects of agriculture risks, especially production risks; to increase farmers' access to credit; and to make crops, livestock, and aquaculture insurance affordable to smallholder producers. The UAIS offers a range of crop, livestock, poultry, and aquaculture insurance coverage to Ugandan farmers, and is promoted by the GoU through the provision of premium subsidies. The objective of the review is to provide recommendations for enhancing the scalability and sustainability of the GoU's approach to promoting agriculture insurance in Uganda.

Agriculture is a key sector in Bangladesh, but it is highly exposed to risks. While agriculture is a source of employment and livelihood for nearly one in two adults in Bangladesh and contributes about 16 percent to gross domestic product (GDP), it is highly exposed to natural hazards. In the past, the government of Bangladesh and development partners have provided substantial support to farmers in the aftermath of large disasters, but this approach has disadvantages in that support is not guaranteed to farmers and may be slow. Agricultural insurance offers the government a planned, fast, ex ante alternative to ad hoc disaster response, one that: (1) reduces the ex post fiscal burden on the government, (2) improves farmers' resilience to shocks, and (3) supports the expansion of agricultural credit. International experience shows that government can play a variety of roles to support the responsible scale-up of agriculture insurance. The ministry of livestock and fisheries, and other key public and private sector stakeholders, the World Bank Group team has identified four potential types of agricultural insurance to offer in Bangladesh, all of which will require implementation through a partnership between the public and private sectors. The four types are dairy cattle insurance, aquaculture insurance, crop insurance, and fully subsidized agricultural insurance for the most vulnerable.

**Report of the workshop on development of aquaculture insurance system for small-scale farmers, Bangkok, Thailand, 20-21 September 2016**  
**Agricultural Insurance Component Pre-feasibility Study Report**  
**Livestock and Aquaculture Insurance in Developing Countries**  
**Aquaculture Health Management**  
**Statistics and Emerging Trends 2008**