FAO FIMA. 2008. Understanding and applying risk analysis in aquaculture production: a manual. *FAO Fisheries Technical Paper.* Rome, FAO. 2008.

A manual that provides practical guidance to users (policy makers, interested individuals) of risk analysis as a decision making tool. Four major chapters: (i) Introduction (concept of risk analysis, general framework of risk analysis, purpose, definitions and terminology), (ii) Operating environment (overview of regulatory frameworks and key risk categories, (iii) Risk analysis process for aquaculture, (iv) Next steps (implementation, information acquisition and management, capacity building needs, challenges ahead). (PCA Norway funding, Responsible Officers: MB Reantaso/ RP Subasinghe).

Bondad-Reantaso, M.G.; Arthur, J.R. & Subasinghe, R.P. (eds). 2008. Technical Proceedings of the Expert Workshop on Understanding and Applying Risk Analysis in Aquaculture Production. *FAO Fisheries Proceedings.* Rome, FAO.

Contains the outcomes of an Expert Workshop held in June 2007, peer-reviewed articles on risk and risk management in aquaculture (general principles of risk analysis and application to aquaculture, pathogen risks, food safety and public health risks, financial risks, social risks, marine invasives risks, environmental risks, ecological (pest) risk assessment, ecological risk assessment of marine fish aquaculture, insurance industry risk analysis and better management practices). (PCA Norway funding, Responsible Officers: MB Reantaso/ RP Subasinghe).

FAO FIMA. 2008. Diagnostic Guide to Aquatic Animal Diseases. *FAO Fisheries Technical Paper No. 402/3.* Rome, FAO. 2008. An updated version of FTP 402/2 (2002) Asia diagnostic guide to aquatic animal diseases, this edition now has global coverage.

The full-color guide contains at least 50 diseases/pathogens, each disease chapter will have the following information: background information, causative agent, host range, geographic distribution, clinical aspects, diagnostic methods, corroborative diagnostics, modes of transmission, control measures and their impacts and up to 10 key references. Thirty global contributors and peer-reviewers (from Australia, Canada, China, Denmark, France, India, Italy, New Zealand, Norway, Spain, Thailand, UK, USA). (PCA Norway funding administered by AGNS, peer-reviewed publication, Responsible Officers: MB Reantaso/ RP Subasinghe).

FAN published in 2006 - 2007

Bondad-Reantaso, M.G.; Subasinghe, R.P.; Kanchanakhan, S.; Mohan, C.V.; Nengu, S.; van der Waal, B. & Phillips, M.J. 2007.

Report of the FAO/AAHRI/NACA/ Botswana Department of Wildlife and Natural Parks Emergency Disease Investigation Task Force of a Serious Fish Disease Outbreak in the Chobe-Zambezi River. Rome, FAO. (PCA Norway funding administered by AGNS, Responsible Officers: R Subasinghe and M Reantaso).

Soto, D.; Aguilar-Manjarrez, J.; Hishamunda, N. & Deudero S. (eds). 2008. Building an Ecosystem Approach to Aquaculture (EAA). 2008. FAO Fisheries Proceedings.

The publication includes the meeting report with agreed concepts, principles and scales for the implementation of EAA plus papers presented and discussed in the workshop on *"Building an Ecosystem Approach to Aquaculture: initial steps for guidelines"* which took place in Palma de Mallorca, Spain from 7 to 11 May 2007. This activity brought together an international group of 22 experts. Papers include two global reviews (one marine and coastal another on freshwater aquaculture) on present situation regarding a potential ecosystem approach of major aquaculture species. Other concept papers include the social, the economic and the policy/ legal implications of an EAA. Experts coined a definition for an ecosystem approach to aquaculture considering the environmental, social and sectoral implications and taking in account CBD ecosystem based management framework as well as the CCRF. Additionally experts identified some aquaculture practices which policy-makers could use when promoting EAA considering at least four implementation scales and levels, the farm, the watershed, the aquaculture zone and the global market scale. Review and scoping papers analyze the present situation of aquaculture and the potential for implementation of an ecosystem based management. (Japanese Trust Fund Responsible officer: D. Soto).

Ostrensky, A.; Borghetti, J.R. & Soto, D. (eds). 2008. *A Sectoral Study for Consolidation of a Sustainable Brazilian Aquaculture*. FAO Brazil-SEAP/ PR, Curitiba, 313 pp.

This publication (in Portuguese, English Summary) resulted from TCP/BRA/3001 for the Institutional Strengthening of the Aquaculture and Fisheries Secretariat of Brazil - aquaculture component. Its aim is to give a detailed diagnosis of Brazilian aquaculture addressing technical, political and institutional issues. Those themes are complemented by an analysis of the historical aspects of the activity, with an assessment of the associated problems and environmental solutions. The analysis also includes the role of aquaculture in the social development, its interaction with other productive chains, the society's perspective of the activity, and, above all, the hindrances and the possible solutions to truly include aquaculture in the list of activities that are recognizably important for Brazilian agribusiness. The main message is that aquaculture can be a development tool for Brazil but it needs improved policies and better government- private sector coordination to facilitate it. (TCP funding, Responsible officer D. Soto).

FAO/Network of Aquaculture Centres in Central-Eastern Europe (NACEE)/ФАО/Сеть центров по аквакультуре в Центрально-Восточной Европе (NACEE). 2007. Report of the Third Meeting of Directors of the Network of Aquaculture Centres in Central-Eastern Europe (NACEE). Dubrovnik, Croatia, 28–30 September 2006. Протокол Третьего совещания директоров Сети центров по аквакультуре в Центрально-Восточной Европе (NACEE). Дубровник, Хорватия, 28–30 сентября 2006 г. *FAO fisheries report/ Доклад ФАО по рыболовству*. No. 841. Rome/Рим, FAO/ФАО. 2007. 275 pp.

The Third Meeting of Directors of the Network of Aquaculture Centres in Central-Eastern Europe (NACEE) took place in Dubrovnik, Croatia, from 28 to 30 September 2006. The Meeting was hosted by the University of Dubrovnik, and was attended by 50 participants representing 36 institutions from 15 countries, and by representatives of EUROFISH and FAO. NACEE increased its membership to 38 institutions from 15 countries. Both the Progress Report and Financial Report were discussed and adopted by the Directors. All four NACEE Working Group reports were accepted. An extensive discussion took place on issues of networking and information exchange. Reference was made to a proposal for a project on "Study of the current status and development of the strategy of aquaculture development in countries of Central and Eastern Europe for the period up to 2020–2030". Signing of a Memorandum of Understanding on establishing a joint NACEE Master Programme in Aquaculture by NACEE member educational institutions was stressed as a particular result of the Meeting. (Responsible officer U. Barg).

FAO/Network of Aquaculture Centres in Central-Eastern Europe (NACEE), 2007. *Regional review on aquaculture development. 5. Central and Eastern European region – 2005.* FAO Fisheries Circular. No. 1017/5. Rome, FAO. 2007. 84 pp.

FAO regularly conducts global and regional reviews of aquaculture status and trends, most recently during 2005 and 2006. The present regional review and synthesis for Central and Eastern Europe (CEE) provides an overview of major issues and trends in the aquaculture sector. The dominant technology is carp-based polyculture production in ponds. Production declined significantly following the political and socio-economic changes in the early nineties. Since 1996, production is gradually increasing. Aquaculture is an important supplier of healthy food for local populations, and will continue to contribute to rural development. During the Astrakhan workshop in 2005, 13 NASO-PAFAD country review studies and the draft Regional Aquaculture Review were presented and discussed. A series of common issues, constraints and trends were recognized for the region covering: predominance of carp production, low production levels, inefficient farm management and marketing, lack of skilled staff, financial and legal problems. Four major thematic areas were analysed: (a) policy framework, legislation and institutional systems; (b) farming systems, species and technologies; (c) processing and marketing (consumers' demand, labelling, certification); and (d) social aspects (food supply, employment, income generation). The workshop highlighted the following points: (a) the significance of aquaculture development in CEE has to be emphasized; (b) governments and other policy-makers should be informed about the opportunities and need of developing a sustainable aquaculture sector; (c) producers should recognize consumer demands and the increased market competition with other commodities; and (d) NACEE can play an important role in facilitating the information exchange in the region. The regional review indicates that there are opportunities for integrating aquaculture with other activities, for enhancing exports, and for strengthening institutional capacity building. There is need for research, technology development and investment to improve sustainability of existing farming systems, to promote diversification using additional and high value species, and to expand marine production systems. There is significant scope for improved human resources development, for better collaboration among farmers, and between science and practice, and for international collaboration, within the region and with institutions and organizations outside the region. (Responsible officer U. Barg).

GESAMP (IMO/FAO/UNESCO-IOC/WMO/IAEA/UN/UNEP/UNIDO Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection), 2007. Assessment and communication of environmental risks in coastal aquaculture. Rome, FAO. Rep.Stud. GESAMP (74).

Much of present increases in fisheries production in many areas comes from coastal aquaculture, an activity which in turn increases pressure on the natural resources of coastal areas. At the same time the public is demanding a greater role in the management of those resources and many jurisdictions are developing participatory management schemes that include the public in resource allocation decisions. In this new management paradigm when scientists now assess the environmental risks associated with coastal aquaculture development, they must also be clear about the uncertainties associated with those assessments and communicate all this information to managers and the public in a fashion that meets the information needs of managers and the public at the same time. That task is made even more difficult in that the information scientists have traditionally supplied managers is frequently not the same information the public requires for developing their view of the nature of an environmental risk.

To respond to this new management paradigm GESAMP Working Group 31 on the Environmental Impacts of Coastal Aquaculture has developed an integrated risk assessment/communication protocol that fits within a risk analysis structure for resource management. The protocol emphasizes the role of communication in decision making and in the creation of environmental risk assessments that communicate procedures and results of risk assessments in a fashion that is acceptable to stakeholders as well as scientists. The protocol is formatted to clarify what is social or economic input to the decision making process and what is environmental science input. The scientific component of the analysis is concentrated in the risk assessment. Key to effective risk assessment and management is the clear identification of the hazards associated with aquaculture, the effects of those hazards, and the parameters used to measure and evaluate those effects. The protocol emphasizes the importance of developing the best possible chain of causal links between an aquaculture hazard and the effect that hazard can have on the environment.

The protocol has been developed to work within a participatory management scheme that includes stakeholders and the public.To illustrate the use of the environmental risk assessment protocol a series of case studies are presented for a number of types of coastal aquaculture activities including shrimp culture, oyster culture and, salmon and grouper culture in a wide variety of environments. (Responsible officer U. Barg).