

Dhaka Declaration On ECOLOGICAL RISK ASSESSMENT OF GENETICALLY IMPROVED FISH

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BACKGROUND

Fish is the major source of animal protein and contributes to livelihoods and food security of millions in most developing countries. Fish production from natural resources has been declining and nations are looking to aquaculture to bridge the gap between supply and demand for fish. Studies undertaken in recent years on genetic improvement of commercially important cultured fish species by selective breeding and other non-transgenic mechanisms have started to yield results and improved strains are now being disseminated.

The improved strains of fish have generated significant economic and social benefits. However, if not properly managed, their escape into the natural environment could lead to risks to aquatic ecological integrity and biodiversity. Hence, prior to disseminating improved strains of fish, it is imperative that protocols and policies governing dissemination are reviewed, methods to assess the possible ecological risks formulated, and ways and means of averting any possible impacts identified, including measures to contain escapes.

Fifty-four participants including aquaculturists, geneticists, ecologists, biodiversity specialists, researchers, administrators and development workers from 20 countries representing national/research institutions in Africa, Asia and the Pacific, non-governmental organizations and regional/international organizations (e.g. Food and Agriculture Organization-FAO, The World Conservation Union - IUCN, Southeast Asian



Fisheries Development Center - SEAFDEC, Secretariat for Pacific Community - SPC, Network of Aquaculture Centers in Asia-Pacific - NACA, Asian Institute of Technology - AIT, and the WorldFish Center) held an Expert Consultation on Ecological Risk Assessment of Genetically Improved Fish during 4-6 August 2003 in Dhaka, Bangladesh, under the auspices of the International Network on Genetics in Aquaculture (INGA). The participants discussed the benefits and potential risks of improved fish strains, initiated development of guidelines for the environmentally safe dissemination of improved fish strains and a framework for risk assessment.

Based on the deliberations at the meeting, the participants formulated a declaration as given in following pages:



We, the participants of the *Expert Consultation on Ecological Risk Assessment of Genetically Improved Fish*, are committed to the conservation and understanding of aquatic biodiversity at all levels. Aquaculture is expected to play an increasingly important role in poverty alleviation and food security in developing countries, and we support the development of responsible and sustainable aquaculture for increased productivity whilst protecting the integrity of indigenous biodiversity and ecosystems.



We also recognize that responsible and sustainable aquaculture has to be consistent with the national obligations of countries under international instruments and Codes of Conduct, particularly the FAO Code of Conduct on Responsible Fisheries (1995) and its Technical Guidelines on Responsible Aquaculture (1997), the Convention on Biological Diversity and the Cartagena Protocol.

Bearing in mind the existing international and national instruments and non-binding Codes of Conduct, as well as recommendations contained in the Nairobi Declaration on Conservation of Aquatic Biodiversity and Use of Genetically Improved and Alien Species for Aquaculture in Africa (2002), we recommend:

1. Policies:


Recognizing that existing institutional mechanisms, policies and legal frameworks related to introductions do not adequately cover issues posed by improved strains of fish, it is recommended that:



-  relevant national and international instruments and non-binding Codes of Conduct should be reviewed and strengthened, taking into account national obligations under international instruments and agreements; and
-  effective institutional frameworks, monitoring and enforcement mechanisms be established at national and local levels as appropriate

2. Implementation:


Acknowledging that existing protocols for assessment of risks of introductions of alien and/or transgenic species and their implementation may not fully address issues related to improved strains, it is recommended that:

-  transparent, objective and practical methodologies be adopted and promoted for assessment of risks associated with the dissemination of improved strains of fish and implementation of relevant protocols.




3. Transboundary movements:


Recognizing potential risks associated with the movement of genetically improved fish beyond national and watershed boundaries, it is recommended that:

 countries should initiate measures to fill policy gaps, and frameworks where necessary to cover transboundary movements.

4. Capacity building:

Understanding that knowledge and capacity in developing countries to assess risks is often limited, it is recommended that:



 institutional capacity should be strengthened at all levels to implement and enforce policies and regulations pertaining to the introduction and dissemination of improved strains of fish; and

 international cooperative programs be undertaken to improve understanding and address ecological, social and economic issues related to improved strains of fish.



5. Awareness:

Noting that critical information pertaining to benefits and potential risks of improved strains of fish is not reaching stakeholders, it is recommended that:

-  the public and decision-makers be made aware of the issues pertaining to the dissemination of improved strains of fish; and
-  networking should be promoted among all relevant institutions to address knowledge gaps and inform all stakeholders of issues related to research, use and management of improved strains of fish.



LIST OF PARTICIPANTS

AUSTRALIA

DR. CHRIS MERVYN
AUSTIN
Head of Aquatic Ecology
and Senior Lecturer
School of Ecology and
Environment
Deakin University
P.O. Box 423, Warmambool
3280

Victoria, Australia
Tel: (61 3) 5563 3518
Fax: (61 3) 5563 3462

DR. PETER MATHER
Associate Professor
(Genetics and Ecology)
School of Natural Resource
Sciences
Queensland University of
Technology (QUT)
Faculty of Science
G.P.O. Box 2434
Brisbane Q 4001
Australia
Tel: (61 7) 3864 1737
Fax: (61 7) 3864 1535

BANGLADESH

DR. M.A. MAZID
Director General
Bangladesh Fisheries
Research Institute
Mymensingh 2201
Bangladesh
Tel: (880 91) 54874
Fax: (880 91) 55259

DR. M. GULAM HUSSAIN
Director, Research and
Planning
Bangladesh Fisheries
Research Institute
Mymensingh 2201
Bangladesh
Tel: (880 91) 54221
(880 91) 54010
Fax: (880 91) 54221

MD. SHAHIDUL ISLAM
Scientific Officer
Freshwater Station
Bangladesh Fisheries
Research Institute
Mymensingh 2201
Bangladesh
Tel: (880 91) 54221
Fax: (880 91) 55259



MR. MD. NOOR KHAN
Scientific Officer
Freshwater Station
Bangladesh Fisheries
Research Institute
Mymensingh 2201
Bangladesh
Tel: (880 91) 54221
Fax: (880 91) 55259

DR. M.S. SHAH
Professor
Fisheries and Marine
Resource Technology
Discipline
Khulna University
Khulna 9208, Bangladesh

DR. MD. MUKLESUR
RAHMAN KHAN
Associate Professor
Department of Fisheries
Biology and Genetics
Bangladesh Agricultural
University
Mymensingh-2202
Bangladesh

MS. AYESHA BEGUM
Assistant Chief
Ministry of Fisheries and
Livestock
Bangladesh Secretariat,
Dhaka
Bangladesh
Tel: (880 02) 9550 371

DR. M. A. SATTAR
Project Director
Northwest Fisheries
Resources Development
and Management Project
(Phase 3)
Parbatipur, Dinazpur
Bangladesh
Tel: (880) 531 0597
Fax: (880) 531 74324
(880) 531 74401

DR. DILIP KUMAR
Team Leader
Empowerment of Coastal
Fishing Communities for
Livelihood Security
(UNDP/FAO Project :
BGD/97/017)
ADB Hatchery Campus
Cox' Bazaar, Bangladesh
Tel/Fax: (88 0341) 63871



MR. MD. MOKARROM
HOSSAIN
Program Manager
Rural Development
Program
BRAC Center
75 Mohakhali, Dhaka 1212
Bangladesh
Tel: (880 2) 9881 26572
Fax: (880 2) 8823 542;

MR. MUNJURUL HANNAN
KHAN
Programme Coordinator
IUCN Bangladesh Country
Office
House 11, Road 138
Gulshan 1, Dhaka 1212
Bangladesh
Tel: (880 2) 9890 395;
(880 2) 9890 423
Fax: (880 2) 9892 854

CAMBODIA

MR. HAV-VISETH
Deputy Chief
Aquaculture Bureau
Department of Fisheries
P.O. Box 835
186 Norodom Blvd.
Phnom Penh, Cambodia
Tel: (855 210) 565
Fax: (855 23 210) 565

CHINA

PROF LI SI-FA
Director
Aquatic Genetic Resources
Laboratory
Shanghai Fisheries University
334 Jun Gong Road,
Shanghai 200090, China
Tel: (86 21) 6571 0333
Fax: (86 21) 6568 4153

PROF. WU TINGTING
Freshwater Fisheries
Research Center
Wuxi, China 214081
Tel/Fax: (86 510) 5554552

CÔTE D'IVOIRE

DR.VALENTINE YAPI-
GNAORE
Centre National de
Recherche Agronomique
(CNRA)
Km 17 Route de Dabou
01 BP 1740 Abidjan 01
Côte d'Ivoire
Tel: (225) 23 45 41 70;
(225) 23 45 33 00;
(225) 23 45 31 16
Fax: (225) 23 45 33 05;
(225) 31 633126



EGYPT

DR. HUSSEIN
ELGHOBASHY
Head of Genetics
Department
Central Laboratory of
Aquaculture Research
Abbassa, Abou Hammad
Sharkia, Egypt
Tel: (20 55)3400 497;
(20 55)3401 027;
(20 55)3401 028
Fax: (20 55)3400 498

FIJI

MR. SATYA NANDLAL
Secretariat of the Pacific
Community (SPC)
B.P. D5 – 9884 Noumea
Cedex
New Caledonia
Tel: (687) 262000
Ext. 265
Fax: (687) 263818

GHANA

DR. EDDIE KOFI ABBAN
Water Research Institute
P.O. Box 38 Achimota
Ghana
Tel: (23321) 775511;
(23321) 768310
Fax: (23321) 761030;
(23321) 777170

HUNGARY

DR. ZSIGMOND JENEY
Research Institute for
Fisheries, Aquaculture and
Irrigation (HAKI)
Anna liget8
5540 Szarvas
Hungary
Tel: (36 66) 515314
Fax: (36 66) 312142

INDIA

DR. W.S. LAKRA
Professor and Head
Genetics and Biotechnology
Division
Central Institute of Fisheries
Education
ICAR
Versova, Mumbai 400 061
India
Tel: (91 22) 26361446;
(91 22) 26321092
Fax: (91 22) 26361573



DR. Y. BASAVARAJU
Associate Professor
(Fisheries)
Inland Fisheries Unit
Main Research Station
Hebbal, Bangalore 560 024
India
Tel: (91 80) 3515644;
(91 80) 8466451
Fax: (91 80) 8466451

DR. R.K. JANA
Director
Central Institute of
Freshwater Aquaculture
P.O. Kausalyanganga,
Bhubaneswar
751002, Orissa, India
Tel: (91 674) 2465 421;
(91 674) 2465 446
Fax: (91 674) 2465 407

DR. K.K. LAL
National Bureau of Fish
Genetic Resources
(NBFGR)
Canal Ring Road
P.O. Diskusha
Telibagh
Lucknow 226002, U.P.
India
Tel: (91 522) 2441
73518
Fax: (91 522) 2442403

DR. P.V.G.K. REDDY
20-82 Chandamama
Building
Sai Nagar
Penugonda 534320
A.P. India
Tel/Fax: (91 8819) 247 182

INDONESIA

DR. ESTU NUGROHO
Research Coordinator
Research Institute for
Freshwater Fisheries
Jl. Perikanan No. 1 Depek
Jawa Barat
16154 Bogor
Indonesia
Tel: (62 251) 313 200
Fax: (62 251) 327 890

JAPAN

DR. MASANORI OKAUCHI
Head, Breeding Group
Farming Biology Division
National Research Institute
of Aquaculture
Fisheries Research Agency
Nansei, Mie 516 0193,
Japan
Tel: (81 0599) 66 1830
Fax: (81 0599) 66 1962



MALAWI

DR. AGGREY AMBALI
Biology Department
Chancellor College
University of Malawi
P.O. Box 280, Zomba,
Malawi
Tel: (265 1) 525 636
Fax: (265 1) 525 829
(265 1) 524 545

DR. EMMANUEL KAUNDA
Senior Lecturer, Department
of
Aquaculture and Fisheries
Bunda College of
Agriculture
Box 219 Lilongwe, Malawi
Tel: (265 1) 277 460
Fax: (265 1) 277 364

MALAYSIA

DR. O.S. SELVARAJ
Associate Professor/Senior
Manager
Professional Development
and Training Division
Head, Fisheries Research
Unit ISB-UM
University of Malaya Center
for Continuing Education
(UMCCed)
Level 2, Block A
University of Malaya City
Campus
Jalan Tun Ismail
50480 Kuala Lumpur,
Malaysia
Tel: (60 3) 2617 3127
Fax: (60 3) 2617 3126

MR. ISMAIL AWANG
KECHIK
Director
Fisheries Research Institute
11960 Batu Maung
Pulau Pinang
Malaysia
Tel: (60 04) 626 3925
Fax: (60 04) 626 2210



NORWAY

DR. JØRN THODESEN
Scientific Advisor
AKVAFORSK Genetics
Center
P.O. Box 5010, N-1432 As
Norway
Tel: (47 64) 94 9500
Fax: (47 64) 94 95 02

PHILIPPINES

DR. MELCHOR M.
TAYAMEN
Chief
National Freshwater
Fisheries
Technology Research
Center/Bureau of Fisheries
and Aquatic Resources
Science City of Muñoz,
Nueva Ecija, Philippines
Tel: (63 2) 3725 057;
(63 44) 4560 6670
Fax: (63 44) 4560 671

MR. BASILIO RODRIGUEZ,
JR.
Executive Director
GIFT Foundation
International Inc.
707 Page I Bldg.
1215 Acacia Avenue
Madrigal Business Park
Muntinlupa City
Philippines
Tel/Fax: (63 2) 809 5848

DR. ZUBAIDA BASIAO
Head, Binangonan
Freshwater Station,
Aquaculture Department
Southeast Asian Fisheries
Development Center
Binangonan, Rizal,
Philippines
Tel: (63 9) 189 285310
Fax: (63 2) 652 0077;
(63 2) 289 1886



THAILAND

DR. SUPATTRA URAIWAN
National Aquaculture
Genetics Research Institute
(NAGRI)
Tumbon Klongha
Amphur Klongluang
Pathumthani 12120
Thailand
Tel: (66 2) 577 5058 9
Fax: (66 2) 577 5062

MR. WILLIAM WYN ELLIS
Asia AgConsult
178/4 Soi Apapirom
Rachadapisek Road
Bangkok 10900, Thailand
Tel: (66 2) 9390018
Fax: (66 2) 5139688

DR. WONGPATHOM
KAMONRAT
Aquatic Biodiversity
Research Group
Inland Fishery Resources
R&D Institute
Department of Fisheries
Bangkok, Thailand
Tel: (66 2) 5580 175
Fax: (66 2) 5580 178

DR. WANSUK SENANAN
Department of Aquatic
Science
Burapha University
Bangsaen, Chonburi 20131
Thailand
Tel: (66 38) 745 900
Ext. 3093
Fax: (66 38) 390 354

DR. GRAHAM C. MAIR
Senior Research Specialist
University of Wales
Swansea and Aquaculture
and Aquatic Resources
Management (AARM)
Asian Institute of
Technology
P.O. Box 4, Klong Luang
Pathuthani 12120 Thailand
Tel/Fax: (66 2) 524 5463

MR. SIMON WILKINSON
Communications Manager
Network of Aquaculture
Centers in Asia-Pacific
(NACA)
P.O. Box 1040
Kasetsart Post Office
Jatujak 10903, Bangkok
Thailand
Tel: (66 2) 561 1728
Ext 113
Fax: (66 2) 561 1727



USA

DR. ERIC HALLERMAN
Professor of Fisheries
Department of Fisheries and
Wildlife Sciences
100 Cheatham Hall
Virginia Tech University
Blackburg, VA 2461-0321,
USA
Tel: (1 540) 231 3257
Fax: (1 540) 231 7580

VIETNAM

DR. NGUYEN CONG DAN
National Component Direc-
tor
Research Institute for
Aquaculture No. 1
Dinh Bang, Tu Son
Bac Ninh, Vietnam
Tel: (84 4) 7716 552
Fax: (84 4) 8273 070;
(84 4) 7716 550

DR. PHAM ANH TUAN
Deputy Director
Research Institute for
Aquaculture No. 1
Dinh Bang, Tu Son
Bac Ninh, Vietnam
Tel: (84 4) 8781 084
Fax: (84 4) 8785 748

WORLDFISH CENTER

DR. MODADUGU V.
GUPTA
Assistant Director General
(International Relations) and
Research Coordinator of
INGA
WorldFish Center
P.O. Box 500, GPO
10670 Penang, Malaysia
Tel: (60 4) 626 1606
Fax: (60 4) 626 5690

DR. A.G. PONNIAH
Program Leader
Biodiversity and Genetic
Resources Research
Program
WorldFish Center
P.O. Box 500, GPO
10670 Penang, Malaysia
Tel: (60 4) 626 1606
Fax: (60 4) 626 5530

DR. RAUL PONZONI
Project Leader,
Biodiversity and Genetic
Resources Research
Program WorldFish Center
P.O. Box 500, GPO
10670 Penang, Malaysia
Tel: (60 4) 626 1606
Fax: (60 4) 626 5530



MS. BELEN ACOSTA
Assistant Scientist
International Relations Office
WorldFish Center
P.O. Box 500, GPO
10670 Penang, Malaysia
Tel: (60 4) 626 1606
Fax: (60 4) 626 5690

DR. JOHANNES JANSSEN
Senior Aquaculture Scientist
WorldFish Center -
Bangladesh Office
House 22B, Road 7, Block F
Banani Model Town
Dhaka 1213, Bangladesh
Tel: (8802) 881 3250;
(8802) 881 4624
Fax: (8802) 881 1151

DR. MD. FERDOUS ALAM
Research Coordinator
WorldFish Center -
Bangladesh Office
House 22B, Road 7, Block F
Banani Model Town
Dhaka 1213, Bangladesh
Tel: (8802) 881 3250;
(8802) 881 4624
Fax: (8802) 881 1151

MR. NASEEM ALEEM
NGO Coordinator
WorldFish Center -
Bangladesh Office
House 22B, Road 7, Block F
Banani Model Town
Dhaka 1213, Bangladesh
Tel: (8802) 881 3250;
(8802) 881 4624
Fax: (8802) 881 1151



International Network on Genetics in Aquaculture (INGA)

- A global forum for collaborative research and training in applied fish breeding and genetics

Objectives:

- Increase the quantity and quality of fish protein consumed by low-income rural and urban people in tropical developing countries through efficient breeding and selection programs that will increase aquaculture production and increase the incomes of resource-poor fish farmers. The aim is to develop sustainable systems, in harmony with the natural environment, to benefit both producers and consumers;
- Strive for the conservation of biodiversity in farmed and wild populations of tilapias, carps and other fish species prominent in inland aquaculture in developing countries

This is being achieved through:

- Assessment of the needs and opportunities for the application of genetics to aquaculture;



- Enhancement of national research capacity for continued genetic enhancement of farmed fish;
- Facilitation of exchange of germplasm following international protocols for transfer;
- Fostering regional and international cooperation in aquaculture genetics research;
- Development of strategies for national fish breeding programs and dissemination of improved fish breeds;
- Strengthening the capacity of private sector hatcheries, non-government organizations and government workers for effective uptake of technology and improvement of efficiency as multipliers of improved fish seed;
- Enhancing public-private sector partnerships for effective dissemination of improved fish seed and other genetic research outputs to end-users;
- Organization of expert consultations on policies related to dissemination of improved strains and conservation of biodiversity;
- Facilitation of exchange of information and methods.