KNOWLEDGE SHARING IN AQUACULTURE: TOWARDS SUSTAINABILITY THROUGH EFFECTIVE COMMUNICATION

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Organization

• Brief description of NACA
• Current status of aquaculture in the Asia Pacific Region
  – Nature of operations
• Challenges of the modern world
  – Coping with the above/ small scale farming
• Need for communications
  – Clusters and BMPs
  – Bottoms up approach
• New initiatives undertaken
• Looking ahead
NACA

• NACA started with 7 governments (1990)
• Current 18
  – Latest Lao PDR (joined in 2009)
    • Target 20 by 2011
• What is the secret?
  – Why do governments wish to join NACA?
Overall mandate of NACA

Develop, facilitate and augment aquaculture development and aquatic resources management to enable the rural poor towards attaining food security and sustainability, and contribute to poverty alleviation.
Project Implementation
-in all certain key elements-

Improving Livelihoods & Food Security

The aim of NACA is to improve the livelihoods of rural farming communities that would result in improving food security and reducing poverty. NACA works with all stakeholders, emphasising small-scale aquaculture development and sustainability.

Nurturing Cooperative Spirit for Aquaculture Development

NACA seeks to improve the livelihoods of rural farming communities, contribute to poverty reduction and increase food security by initiating and implementing collaborative programs of regional significance. NACA encourages cooperation between all groups of stakeholders. A consortium approach is sought to address major issues related to aquaculture development.

Aquaculture for a Greener Tomorrow

NACA promotes sustainable aquatic resource management and aquaculture development that ensures conservation of the environment and its biodiversity. NACA is also addressing global issues such as climate change impacts on small-scale farmers.
Work Programs

• Evolved over the years
• Revised on a regular basis
  – TAC suggestions
  – Regional needs
• Funding
  – Core fund; for salaries + running Secretariat
  – Compete for donor funding
    • EU, IDRC, ICEIDA, NORAD, ACIAR, AusAID, DIFID, WB, ADB, WWF, WFT
  – Work closely with FAO
    • Initiate and Facilitating FAO programs in the region
    • Take part in global programs
How NACA develops and implements programs?

All project developments will ensure that NACA’s simple mandate to improve and sustain the livelihoods of small scale farmers and maintain integrity of the environment are fulfilled.
Food fish - Aquaculture

• Fish becoming one of the most traded commodities for developing countries

• Aquaculture contributing increasingly to food fish supplies
Food fish: aquaculture

• Fish consumption has been on the rise
  – A-P accounts for nearly 70% of global consumption

• Per caput:
  – A-P: 29 kg/year
  – Global: 16 kg/year
Asian Aquaculture: Some Pertinent Points

- Asia accounts for > 85% of global production
- Of the top 10 aquaculture producing countries 9 are Asian
  - China accounts for > 65% of Asian production
- Contribution to national GDP from aquaculture exceeding that from capture fisheries in many countries
Trends in the A-P Aquaculture Sector - Commodities/Value -

- **Crustacean volume only 7 %**
  - But value 21%

- **Finfish:**
  - Volume - 49%
  - Value 55%

- **Aquatic plants:**
  - Volume 22%
  - Value 8%
Trends in the A-P Aquaculture Sector - Commodities/ Unit Values -

- Almost all commodities
- Global & A-P unit prices comparable
- Significant difference between crustaceans and others
- Unit price has declined/or remained static
  - Biggest change in crustaceans

But where and for who benefits most?
Lesser know entities on A-P Aquaculture -Pond Size (Indonesia)-

• A-P aquaculture is:
  – Small scale
    • “Defined as”
      – Farmer owned
      – Farmer operated
      – Farmer managed

• Examples:
  – Indonesia
    • FW Ponds: 0.14 ha
      – Increase in pond area & productivity
    • BW ponds:
      – 2.0 ha
Lesser know entities on A-P Aquaculture -Pond Size (Thailand)-

- **Thailand**
  - **Coastal pond:**
    - Avg. farm size decreased to 0.8 ha
  - **FW ponds:**
    - About 0.28 ha
Lesser known entities on A-P Aquaculture - Pond Size - Vn-catfish -

• > 55% under 4 ha
• But production / ha:
  – Very high
  – Averages 350-400 t/ha/crop
• Still the great bulk:
  – owned, operated and managed
Farm size - Productivity

- Not much data available
- Coastal pond culture Thailand
  - Clear trend
- It may be that:
  - Big farm size does not necessarily bring about higher production
- Scale of economies?
  - Is this applicable to PP sector in A-P?
  - Why would small scale farmers continue to practice their livelihoods?
Farm size in A-P Aquaculture

• General take home message?
  – Great bulk small, owned, operated and managed
  – No different to the rest of PP sectors in the A-P
  • Rice
    – E.g. PR China; worlds biggest rice producer
    – 182.042 x 10^6 t (2006); 29% global production
    – Avg. farm size 0.93 ha/ farm
  • Dairy (RAP, 2008)
    – e.g. India; highest global producer
    – 210 x 10^6 cows & buffaloes
    – But owned by 70 x 10^6 households

• Aquaculture in Asia will remain small scale
  – Development strategies have to “factor” this in

• Most Asian farmers work around miniscule profit margins
Challenges confronting small scale farmers

• Meeting food quality and safety needs
  – Associated with certification
  – Ecolabelling
  – Meeting “standards” imposed by various groups
    • Often predominantly driven by “consumer aspirations”

• Remaining economically viable
  – in a competitive climate
  – in a climate of increasing cost of inputs
Prices, markets and market chains - economic viability at stake?

14-16,000 VND/kg: 1.0-1.10 $/Kg

35-40% yield

$3.0-3.25/kg

2.5-2.75 $/kg

PROFITS

0.10 $/kg

Fillet

0.10-12 $/kg

Offal

0.12-0.15$/kg

Consumer

Europe 7€/
Australia $9.0/kg
Canada 11$/kg

One of the cheapest fish

Farmer

Processor

Super Market chains

Profits?
We are living in a relatively lopsided world??

- **PRODUCER**: (80% small-scale farmers)
- **MARKET**: CONSUMER
- **PROCESSOR**: WHOLESALER
- **PROCESSOR**: MARKET

**DIALOGUE**
**MARKET COOPERATION**
**MUTUAL BENEFITS**

**RESTORING BALANCE**
Challenges confronting small scale farmers
The WAY OUT?

• Adoption of Better Management Practices (BMPs)
  – BMPs are science based improvements to existing practices
• Collective participation
  – Clusters
  – Farmer associations
Noteworthy cases in Asia-Pacific Aquaculture in the last decade
- Development and Adoption of BMPs-

• **Concept of BMPs:**
  – Developed as a consequence to solving disease problems in shrimp farming in India

• **First step:**
  – “International Principles for Responsible Shrimp Farming”
    • A consortium approach
    • WB Green Award for 2006

• **Carried further now**
  – BMPs developed for shrimp farming
  – Vn catfish farming etc.

• **BMPs ensures:**
  – Sustainability
  – Higher production
  – Increases competitiveness of small scale producers
  – Ensures food quality and food safety
  – Facilitates market accessibility to small scale farmers
  – Facilitates environmental integrity
  – Increases harmony among farmers
• Adoption of BMPs in shrimp farming (India)
  – Significant results
  – Policy & governance changes
• Farmers in a cluster act as a unit
  – Increased incomes
  – Higher bargaining power
  – Ensures quality produce
  – Self policing system in place
  – Enable to access niche markets
  – Enable to obtain “cluster” certification
• Soon a regional strategy for important commodities
Challenges confronting small scale farmers
- WAY OUT ?-
How Achieved

• **Development of BMPs for commodities**
  – Communicating with practitioners
  – Science based

• **Farming clusters**
  – Clusters meet certification/standards requirements
    • Makes it affordable to small scale farmers
    • Facilitates monitoring, shared learning/exchange
  – Generates synergies
  – Acting in unison rather than individuals
  – Improves usage of common resources; e.g. water

Becomes Effective only through A Suitable Communication System Among Small Scale Farmers
Challenges confronting small scale farmers - WAY OUT ?-
How Achieved

• **Communication paramount**
  – In cluster formation
  – In adoption of BMPs
    • Monitoring
  – Market accessibility
Challenges confronting small scale farmers - WAY OUT ?-
How Achieved

• Socio-cultural attributes diverse
  – Within countries/communities
  – Between countries

• Tools used have to suit each group

• Communication:
  – Direct within a cluster
    • Different forms
      – Written
      – posters
  – Between clusters

• Possible to bring about policy changes
  – E.g. India-
    • establishment of National Centre for Sustainable Aquaculture (NaCSA)
Challenges confronting small scale farmers
- WAY OUT ?-
How Achieved: communication tools (1)

• Communication tools tailored to suit the needs/ clientele
  – Written materials:
    • Language
    • Easy comprehension/ interpretation etc.
    • Encourage simple record keeping

• Regular group consultations
- WAY OUT ?-
How Achieved: communication tools (2)

• Aceh, Indonesia
  – Devastated by the 2005 Tsunami
  – Rural aquaculture livelihoods had to be revived
    • Still so with a view to meeting modern challenges

• Needed:
  – technology transfer/ build up
  – Facilities for
    • exchange of know-how
    • Market information
Institutionalization

Goal

Issues

Programs

SUSTAINABLE AQUACULTURE THROUGH EMPOWERING FARMERS

- Poor production skills
- Poor Organization
- Reducing Market price
- Loss of livelihood

- BMPs
- Cluster approach
- WAY OUT? -
How Achieved: communication tools (2)

• New approach developed & adopted
  – (see details in Aquaculture Asia, Vol. XIV, 2009)

• Establishment of:
  – Aquaculture Livelihood Service Centres
    • In each village/cluster
    • Using public amenities
  – Aceh Aquaculture Communication Centre
    • Central location with technical & market know-how

24 hr communication channel
- WAY OUT ?-
How Achieved: communication tools (2)

• Farmers “leaders” trained in use of modern IT
• Leaders train cluster members (under supervision)
• Information exchange facilitated through “skype”, e mail etc.
- WAY OUT ?-
How Achieved: communication tools (2)

Schematic representation of the services provided by ALSC and its goals

Organized small-scale aquafarmers through

Communicating through modern tools

In the World of **Homo interneticus** Modern tools- the web etc. Should Not be the Domain of a Select Elite Only
Challenges confronting small scale farmers

- WAY OUT ?-

How Achieved

- Inter-country communication channels

  - Application of Indian approach to catfish farming in the Mekong Delta, VietNam

  - Why?
- Striped catfish culture in the Mekong Delta, Vietnam -

- Possibly the fastest growth in any sector, globally, ever
- Total area of farming ~6 to 7,000 ha
  - 2007: $683 \times 10^3$ t ($645 \times 10^6$ US$)
  - 2008: $835 \times 10^3$ t ($800 \times 10^6$ US$ - first seven months)
    - The fastest growth for any aquaculture sector, in a nation, in a small area
  - Over 200,000 employed
    - Bulk women
    - Empowers households
Why inter-country interaction?

• Catfish farmers in Vn
  – Small profit margins
  – Dictated by processors
  – Act individually

• Lessons to be learnt from India (shrimp farming) on:
  – Cluster organization & function
  – Adoption of BMPs

• Adopted the principle “seeing is believing”
  – Group interactions effected

• Results:
  – Rapid adoption of BMPs
  – Clusters formed
    • Crop calendars introduced
    • Profits increased
    • Produce marketed through groups
Communication with the Vn Catfish Farming Community
- Group Meetings/ Simple Posters Carrying the Message

BIỆN PHÁP THƯC HÀNH NƯỚC TÔT (BMP)
Nâng cao hiểu biết về kinh tế xã hội và bảo vệ môi trường thông qua áp dụng BMP

BMP
- ĐỂ ÁP DỤNG
- KHÔNG BỊ BỤC
- THU DỤC VIỆU THỰC HIỆN THÔNG MỌI NƯỚC
- ĐỀ NƯỚC UY TÍN VÀ ĐƠN GIẢN
- NGĂN CẢO Habwe Kính tế xã hội và bảo vệ môi trường và nâng cao tính cộng đồng

ƯU ĐIỂM CỦA VIỆC ÁP DỤNG BMP

GIẢM DỤC BỆNH
- Kích động áp dụng BMP, các biện pháp phòng bệnh và tránh lây nhiễm dịch bệnh, giảm thiểu rủi ro cho người nuôi, đặc biệt là khi xảy ra các dịch bệnh và các rủi ro khác.

GIẢM CHI PHÍ
- Sử dụng BMP trong nuôi trồng thủy sản không những giúp nâng cao hiệu quả kinh tế, giảm thiểu tốc độ đói, mà còn nâng cao tính cộng đồng.

DIỄN ĐÀN THỰC TẾ CỦA NGƯỜI TRƯỞNG NÂNG CAO GIÁI BẢN
- Phần lớn người nuôi sẽ được khuyến khích áp dụng BMP, giúp nâng cao chất lượng sản phẩm, tăng tính cạnh tranh của sản phẩm, góp phần nâng cao giá trị sản phẩm.

DIỄN ĐÀN TƯ DUY CỦA NGƯỜI TRƯỞNG NÂNG CAO GIÁI BẢN
- Sử dụng BMP sẽ giúp tăng cường sự tin tưởng và chấp nhận của người nuôi, góp phần nâng cao giá trị sản phẩm, tăng sự tin tưởng của người tiêu dùng.

CÁCH THỨC THỰC HIỆN BMP
Nâng cao hiểu biết về kinh tế xã hội và bảo vệ môi trường thông qua áp dụng BMP

- Đạt hiệu quả cao trong việc thực hiện BMP, các hộ nuôi liên kết nhanh chóng, tăng hiệu quả kinh tế, giảm thiểu rủi ro.
- Sử dụng BMP trong nuôi trồng thủy sản không những giúp nâng cao hiệu quả kinh tế, giảm thiểu tốc độ đói, mà còn nâng cao tính cộng đồng.

- Các hộ nuôi liên kết nhanh chóng, có thể hưởng lợi từ việc hợp tác, do đó giảm rủi ro.

- Hợp tác nhóm và tự xây dựng BMP cho nhóm mình. Mỗi quyết định đều được thành viên trong nhóm bàn bạc và quyết định. Việc này giúp nhóm nuôi tăng cường sức mạnh, không phải đối mặt với rủi ro.

- Lên kế hoạch và tiếp tế hỗ trợ cho người nuôi, giúp họ vượt qua khó khăn.

- Lên kế hoạch và tiếp tế hỗ trợ cho người nuôi, giúp họ vượt qua khó khăn.

- Mô hình này được thực hiện rất thành công trong những nuôi trồng ở An Độ. Người nuôi tại An Độ và hỗ trợ các nhóm liên quan, đã có thể tự mình tìm hiểu và áp dụng, nâng cao hiệu quả kinh tế xã hội.

Người nuôi cá tra ở Việt Nam đã có dịp tham quan mô hình BMP ở An Độ và đang bước đầu phấn đấu áp dụng mô hình này.
Take home message:
Achieve Millennium Goals

1. Reduce by half the proportion of people living on less than a dollar a day
2. Achieve full and productive employment and decent work for all, including women and young people
3. Reduce by half the proportion of people who suffer from hunger
Take home message:
Achieve Millennium Goals

• Do so through sustainable development

• Be conscious that:
  – “Sustainability is not about technology, it’s about attitudes” - Dennis Meadows
    • (Author of Limits to Growth)

• Attitudes and technologies:
  – Best nurtured and be most effective through the adoption of appropriate communication mechanisms; trust and shared values become of increasing importance.

Poor, small scale farmers have all the capability to utilize modern tools of communication effectively and efficiently; to meet the global challenges. We need to provide them with the opportunity to do so & then only we will be assured of our future food fish supplies
Thank you all !!!