APPENDIX E

Workshop Notes

Compiled by Laurie Jodice, Oregon State University
(Presentations available at http://oregonstate.edu/dept/trainfishmngr/presentations.html)

DAY 1, Wednesday, 5 December 2001

Plenary 1: The Visions—What Skills Will Fishery Management Require?
Chair
Susan Hanna, Oregon State University

Bruce Morehead, National Marine Fisheries Service

1. Federal fisheries management history and lessons learned from past
   • Increasing impact on other protected resources
   • Responsible fishing
   • Efforts lag behind increasing capacity to catch fish
   • Reversing excess capacity
   • Sustainable Fisheries Act 1996
   • Economic effects/communities
   • Time and money
   • Decision reviewable—110 open lawsuits
   • Indecision affects economy/communities
   • Scientists not necessarily trained as fishery managers
   • Conflicts between protected resources and fishermen on every coast
   • Manage on ecosystem basis
   • Forecasting and minimizing adverse effects
   • Impact of aquaculture on capture fishery—low cost of farm raised salmon
   • Recreational—competition, overcapitalized, access—greater complexity

2. What does a fisheries manager of the 21st century need to be? Depends on governance structure—e.g., councils/secretary of commerce in U.S., international agreements, congressional/legislative actions, regional/state, public. In past, the expectation was stewardship; now there are complex management objectives/sustainability.
   • Learning and adapting
   • Decision making
   • Leadership
   • Evaluating effectiveness of fisheries management regulations
   • Integrate many objectives (marine fish, Coastal Zone Management, Environmental Protection Agency in U.S.)
   • Integration of public ownership and fish stewardship
     o Incentives for capacity reduction
     o Essential fish habitat (EFH)
     o Illegal fishing
• Maintain diversity (fish, users), balance interests, protect stocks, reduce capacity, ecosystem level management
• Need qualified scientists, but more than fish biology; specialists/assistance from experts (biology, economics, sociology, law, management); increasing understanding of the need for management skills
• Passion for marine environment
• Education does not end with school

David Doulman, FAO of the UN

Global perspectives that will shape training:

1. Past: priority has been to implement new initiatives
   • State of the world fisheries and aquaculture report
   • Law of the Sea didn't bring anticipated changes, i.e., with duty to cooperate
   • Long-term sustainability concept—is more inclusive; managers in industry and other stakeholders brought into management
   • Agenda 21, 1993 compliance, 95 Fish docs, 95 Code of conduct—include stuff that is difficult to implement or requires further research
   • Many countries suffering from implementation overload

2. Now: FAO mission is to facilitate effective implementation of existing protocols
   • Small-scale and industrial fisheries
   • Community involved in management of fish (Samoa, Tonga, Fiji)
   • No small-scale fisheries are managed
   • Responsible fisheries, inclusive management
   • Management from bottom up—Canadian fish board, see my paper - change in commitments, dispute resolution, sanctions, penalties
   • What type of management systems are most appropriate,—best type of manager for developing countries

3. Who is the fisheries manager of the 21st century?
   • Same problems
     o Increase in IUU fishing, illegal unreported
     o Support for long term
     o Increased difficulties in implementation
     o Limit of technology and financial institutional capacity in developing nations
   • FAO role—manager skills:
     o Multidisciplinary team
     o Stakeholder inclusive management—philosophical transition to this type of management (include enforcement)
     o Assess alternatives—suited to local conditions (not just imported)
     o Promote implementation
     o Effective with people
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- Training:
  - Fisheries management—broad, holistic
  - Biology, economics, sociology, law, environmental management
  - Ongoing/continuing education—skill enhancement
  - For young managers—professional attachments to institutions or university for period of time
  - Orientation toward management of people

- Developing countries: emphasis on development of institutional and human capacity—major challenges are:
  - Weak fishery governance
  - Problem of long-term government support
  - High attrition rates—movement from public to private or another government ministry, or migration overseas (train three to get one)
  - Slow, needs assistance from developed countries (TCDC—tech coop. among developing countries?)
  - Enforcement is key issue

- FAO current action:
  - No dedicated program in training
  - We were thinking of using UN Train X program, but no budget support
  - What we do:
    - Partner with others to promote workshops and training
    - Provide inputs into university courses
    - Professional attachments in Rome for developing countries
    - Training manuals
    - Collaborate with Train Sea Coast – United Nations program in New York—"responsible fish management in island nation"; “code of conduct” for responsible fishing
    - FAO is not a funding agency, so countries need to develop other partnerships for implementation
    - Broader sector reviews

Whaimutu Dewes, Treaty of Waitangi Fisheries Commission

Integrated relationship between:

```
Ethical  Technical
    ↑   ↓
Institutional ← Relational
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1. Technical ability—is it a given? It should be.
   - Biology, ecology, pop dynamics
   - Relevant data
   - Stock assessment, modeling, math
   - Build picture from top down and bottom up

2. Ethical/values:
• Sense of belonging—described generational relationships from Maori perspective; people are in direct relationship with sea and fish and so have responsibility (survival)
• Obligation to look after offspring
• Underlying ethical framework; ethical framework and values critical
• All of our resources are linked; we have an obligation to sustain

3. Building and maintaining institutional capacity
• Beyond individuals
• Building capacity to decrease turnover/attrition
• Need to understand the decision-making drivers that occur in business
• Collective responsibility
• Managing what the people do – “drive” behavior
• Individuals see themselves as part of overall framework and sum of whole is greater than parts; the individual matters
• Managers need clear governance structures, understanding of mandates and their role, cross-sectional understanding
• Facilitate accountability
• Effective leadership across all sectors, leaders take rational risks
• Understanding of the costs/benefits of decisions

4. Relationships: recognize the trade-offs in decisions:

\[
\begin{align*}
\text{Survival} & \quad \downarrow \\
\text{Cultural Integrity} & \quad \rightarrow \quad \text{Material Integrity} \\
\downarrow & \\
\text{Cultural Strength} & \quad \leftrightarrow \quad \text{Material Strength}
\end{align*}
\]

• Continued strong leadership from all sectors involved, risk taking, need people behind them.

Maori Training program (also see: http://www.tokm.co.nz/main.htm and click on “training and development” for more information)
• 1995 (start of Treaty) = training and development program for Maori people
• ~5000 people in training or graduated since 1995
• Across many disciplines (fishing schools, economists, indigenous government)
• Maori have been challenged to produce needs analysis for training—New Zealand Seafood, New Zealand, and the international community need to consider these needs.
Plenary I, Day 1: Questions from audience

Q1. Indigenous management structures—what is happening (particularly regarding management of small-scale fisheries)?

A1. Doulman:
- Some countries have had clear management structure; for others, the resources belonged to the king, and indigenous structures have been eroded
- Movement away from fishery administrators toward having management back in the community
- FAO has a huge project in South Africa on community-based management

Q2. Complexity and related skills—should all of these skills be in one person or different persons with specialized skills? Isn’t there a need for on-the-job training? Is the market big enough for professional fisheries managers? Fisheries Biology comes closest to having a profession. What sort of programs are needed to cope with these questions?

A2. Morehead: Training courses and on-the-job training can be useful for specialists.

A2. Dewes: Specialists need insight about other disciplines; we need the best possible information for decisions. They must be able to understand cost/benefit. We should bring individual experts together (network) to contribute to best decisions.

Q3. (comment) How do we bring individual capabilities together?
- Mechanisms for dialog and integrating knowledge in process
- Another level of integration beyond bringing together specialists, example: Biologist: what is the best information when communicating with stakeholders? Dialog with other disciplines is a larger challenge

Q4. How broad is the definition of a fishery manager? Who are we talking about training? Scientists? What about council members, stakeholders, or public who are also fishery managers, if we use a broader definition?

A4. Morehead: in terms of training, I was thinking about academic institutions; NMFS has considered community-level training.

A4. Doulman: training of stakeholders would happen more through extension rather than academic training.

Q5. (comment) What about practical knowledge? There are managers who have never caught a fish; managers must have practical knowledge.

Q6. Training is dependent on goals of management, but in U.S., there is no penalty for destroying industry, need agreement on goals that are in balance.
A6. Dewes: sees fishery management not as an occupational category, but a type of decision making and integrated view; how to manage impact; it is a process; look at the parts of the process but also at the whole; stakeholders will have a role at some point, so they should be educated about the process.

Q7. With respect to the team approach vs. everything from government, is the manager a facilitator? If so, should this role be turned over to the private sector?

A7. Morehead: I have an MBA which was originally aimed at private sector work; NMFS uses some private sector (ideas? contractors?); in the future, NMFS hopes to employ more innovative techniques.

Q8. (comment) Will fishermen listen to managers from government? We need to talk the language that fishermen understand.

Q9. (comment) Managers as professional people; fishermen as trainers; include fishermen in identifying the skill set.

Q10. (comment) I disagree with the need to up skill stakeholders; we do need to focus on managers.

Q11. Is a broader focus is necessary? Ground-up training, advisors on panels, all players need training.

A11. Morehead: example: NMFS can actively provide training vs. encourage individuals to seek opportunities.

A11. (from person who asked question) I suggest practical training; technical training in fisheries for non-fish advisors.

A11. Doulman: There is a need for active stakeholder training.

Q12. What about negative consequences of training? e.g., result can be people who won't do anything as a result of training particularly related to precautionary approach; Who decides what? Some will take advantage of this and don't do anything; "sustainable overfishing" becomes politically correct.

A12. Doulman: Problem of implementing the precautionary approach is very difficult; it is a concept which has been applied in other industries.

Q13. Forestry management comparison? Sustainability, inclusive, ecosystem-based; most of the decisions we thought were good in forestry failed due to not understanding the ecosystem.

A13. Morehead: we are just at the beginning of understanding the ecosystems in the U.S.
A13. Doulman: more work is needed in understanding dynamics of ecosystems.


Q14. (comment) Reducing capacity will go a long way in solving ecosystem problems without understanding these problems; if we are talking about training in the wider context of participation, if so, take training stakeholders seriously. This is not an issue of socializing stakeholders into thinking like professionals, but a need to train all sides to have an open mind and respect for all groups—who to train? how to train? how to develop respect for real participation?

Q15. (comment) How to train participants? Practical ways (practical knowledge of bureaucracy); there are still turnover concerns; also consider credibility of the fisheries manager from fisherman’s perspective and credibility of participants from fisheries manager’s perspective.

Q16. Decision process as trying to regulate vs. decisions that control user behavior to influence sustainability and diversity—there is no guarantee with one decision; the process is continuous; need people with skills to make wise decisions; with focus on ecosystem, go no where because we can't control the ecosystem process; it's the decision process that controls people; good decision makers (ethics, integrity, intellectual ability).

A 16: Doulman: I have always been impressed with people on the West Coast Council.

DAY 1 Plenary 2: Current Programmes and Courses for Fisheries Managers

Speaker:
Gil Sylvia
Oregon State University

Education and Training Overview: Are we responding to the challenge?

No notes: see website for information and presentation
http://www.coas.oregonstate.edu/mrm/curriculum/TFM21.html

There are very few notes on Q &A due to involvement of note taker in presentation.

Q1. (comment) Non-university programs are less threatening to stakeholders.

Q2. (comment) Courses on institutional change?

Q3. Ability of programs to attract mid-career people?
A3. Who are you trying to train is the real question? Which institutions are going to target which level(s)?

Q4. Age structure of students?

A4. In academic programs in U.S., it is most common for students to enter graduate school about 2 years after graduation from undergrad, a few (about 5 percent) are older students going back to school after 10+ years of employment.

Q5. (comment) What about agency training? Example in Washington State—may need to survey agencies.

Q6. (comment) Time dimension? Three year program vs. short term; consider career path and entry level; provide a different suite of programs.

Q7. (comment) People should go to school over time for certification; academics need to get more connected with the fishing industry; fishery managers: what kind of training do they have, how many trained in fisheries management go to fisheries management jobs.

Q8. (comment) need to look at Chile/Fisheries Engineering at Valparaiso.

DAY 1 Plenary 3: Workgroup Responses—The Visions for Management, Managers and Education

Facilitator
Barbara Johnsen, New Zealand Seafood Industry Training Organization (SITO)

Questions:
1. Is there a collective vision robust enough to allow education providers to use it as a base for designing training programs?
2. What are the key skills that educators should be emphasizing when designing training programs for 21st century fisheries managers?
3. What are the capstone areas of a curriculum for 21st century managers?

Government 1
(Included some recreational fishing and indigenous representatives)

1. Vision: sustainable use of fisheries resource affected by range of influences that vary geographically and temporally, including ecosystems, animal rights, and by ocean systems.

2. Skills:
   - Bioeconomic, traditional economic
Leadership
Agility, adaptable, strategic
Good judgement
Conflict resolution
Communication
Social sciences, value systems
People
Facilitative
Negotiation
Balance between academic and practical training
Wide range of skills requires team approach, unlikely to have all in one manager, the fisheries manager has some of all above skills

3. Capstone:
- Internships—middle and end; suitable length
- Case study; applied research projects
- Sea time—commercial and research
- Field experience with stakeholder groups
- Observer program

Government 2
1. No collective vision: skill set depends on position vs. vision for good outcome of fisheries management; differs depending on management paradigms:
- Optimal yield
- Sustainable, healthy ecosystem
- Optimized across value sets
- Participation
- Least cost
- Public support
- Voluntary compliance
- Indigenous interests
- Balance between social, economic, ecosystem objectives

2. Skills: tried to develop global set of skills for effective management of the fisheries management system with interest in good outcomes:
- Ability to integrate across disciplines
- Mechanics of fishing
- Marketing
- Understand use of information technology
- Integrated marine resource management
- Strategic planning
- Flexibility
- Adaptability
• Leadership
• Big picture
• Manage change
• Recognize change drivers
• Business
• People
• Problem solving
• Policy analysis
• Rule making
• Process management
• Monitoring and reporting
• Control?
• Governance frameworks
• Government decision making
• Conflict resolution
• Negotiations
• Decision support skills
• Technical skills – competence to use information
These are not all in one person; manager should be able to recognize value of these skills; depends on sectors – private, public, etc.

3. Capstone:
   • Case studies
   • Modeling
   • Internships or professional mentoring
   • Business problem solving simulation

Industry 1

1. Vision:
   • Economic viability
   • Sustainability of fish stocks
   • Inclusive
   • Efficiency
   • Effectiveness
   • Utilization
   • Transparency
   • Best information
   • Integrated – ecosystem approach
   • Legitimacy/acceptability

2. Skills—all levels/systems
   • Facilitate delivery of programs
   • Policy development and implementation
• People skills
• Knowledge – theory, experiential (fisheries and fish resources)
• Risk assessment and mitigation
• Not afraid to be accountable
• Think strategically and be creative
• Basic sciences involved; social, economic
• Specialists or expert may not necessarily be a good manager

3. Capstone:
  • Internship with industry or agencies for people from academic or management background; internships for industry people with management side

Other comments:
  • Objection to competent fisheries manager being only from degree programs—could get competence with out a Ph.D. program
  • Participants in fisheries have a role in management
  • Suggest certification, performance standards, or diploma?

Industry 2

1. Vision:
  • Hard to separate vision from political fabric, so no real collective vision; doesn’t matter, this should not hinder training
  • Elements common to all visions:
    o Sustainable utilization
    o Ecosystem
    o Decision making at level of communities of interest
  • Industry would be the fisheries managers
  • Often visions articulated but not achieved
  • Vision = effective attainment of visions

2. Skills:
  • Basic people skills – communication, negotiation, multilingual and other skills critical for communication
  • Technical disciplines – inputs to decision-making; some basic knowledge of some of these disciplines; skills to integrate these disciplines
    o Science
    o Policy
    o Law
    o Etc.
  • Experts in science should be “on tap”, not “on top”
  • Information transfer
  • Processing and analysis of information
  • Decision support systems
  • Tools for decision making and planning
3. Capstone:
   - Real world experience is key to training
   - Reality of the fish sector—case studies, conflict resolution experience

Other comments:
   - Hiring—what about real-world experience vs. academic w/ real-world experience?

**Academic 1**

1. Vision:
   - Depends on FM system and the way your nation does business
   - Different types of people needed:
     - Stakeholder representatives
     - Professional decision makers
     - Analytical staff

2. Skills:
   - Problem solving
   - Synthesis
   - Key management tools—basic understanding
   - Critical thinking skills
   - Communication skills—conflict resolution, mediation, interpersonal
   - Management tools—key:
     - Risk management
     - Enforcement
     - Stock assessment
     - Economics
     - Law
     - Politics
     - Fleet dynamics/fishing capacity

3. Capstone:
   - Case studies – e.g., outcomes of specific management plans
   - Bring specialist together to integrate information
   - Connecting/interacting with fishing (fisheries?) communities

**Academic 2**

1. Vision:
   - What you want managers to know should be related to objectives:
     - Wealth creation ➔ Preservation
These are competing objectives

- Sustainability – range of situations all of which are sustainable
- Challenge is to pick the objective that you want

2. Skills – the more complicated the objectives, the more you need to know
   - Basic biology
   - Conflict resolution (What is the role of the manager? To solve conflict or provide information? Who is the manager? Does a council = manager?)
   - Culture
   - Economics
   - Law
   - Practical knowledge of the industry
   - Can one person do all?
     - Experts
     - Some comprehensive knowledge taught via continuing education
     - Can you teach people to resolve conflicts? Some courses with on the job learning

3. Capstone:
   - Agencies
   - Stock management—follow council work in real time
   - Making fish management plans
   - Dependent on cooperation with sectors—long-term interest of managerial groups despite risk of having trainees do work
   - Stakeholders
   - Role playing or defending for or against (debate?)

Summary Points for Day 1

1. Collective vision:
   - Jurisdiction/politics
   - Sustainability
   - Economic viability
   - Types or levels of management
   - Individual or team
   - Generalist/specialist
   - Inclusion

2. Key skills:
   - Generic management (not exclusive to fish management)
     - People
     - Business
     - Intercultural (language, recognition, respect)
• Fisheries specific:
  o Knowledge of industry, other stakeholder groups
  o Fisheries management tools (generic—such as risk analysis; fish specific—such as stock assessment)
  o Managing at the interface between specialist and decision makers
  o Incorporation of indigenous knowledge and industry knowledge

3. Capstone:
   • Internship – putting skills into practice – industry, agency, stakeholders
     (example for industry – exchanges with other companies – particularly for small companies)
   • Case studies – practical, integrated teams
   • Mentoring – network of experts that people can go to

END DAY 1 ☺

DAY 2, Thursday, 6 December 2001

Plenary 1: Linking Capacity to Opportunity
Chair
Kevin Stokes, New Zealand Seafood Industry Council

How do we attract, support, and enable skilled fisheries managers to operate? How do we avoid the micro-management of future fisheries managers, and create opportunities for them to manage? Present participants in fisheries management may be the gatekeepers of the future. How do we enlighten the gatekeepers and decision makers – within the governance of all sectors?

Mark Holliday, National Marine Fisheries Service

Workforce pool changes:
• 44 percent of U.S. government workers are 45+ years old vs. 30 percent in private sector
• 1 in 8 are between 55 and 64, due to retire any time
• 35 percent federal workforce retirement eligible in 2006, 45 percent of senior execs in private sector expected to retire by 2005
• 45 percent of NMFS retirement eligible in 2005 (GS 13+)
• Number of jobs requiring science and engineering expertise will grow 3 times faster than other occupations between 1994 and 2005
• Math and reading skills stagnant
• 2006—151 million jobs, 141 million people
• More people over 50 years of age
• Changing demographics—women and minorities
Changing role of science:
- Lack of trust in environmental decisions of institutions
- Societal expectations for improved environment quality and performance
- Limitations of traditional regulatory procedures in considering the perspectives and values of various stakeholders
- Expanded interest, capability and expectation of many individuals and groups to participate in environmental decision making

Skill set—old:
- Traditional fish biologist—up through the ranks, little exposure to fish management theory
- Occasionally political appointment with no bearings regarding fisheries

Skill set—new
- Interdisciplinary – multidisciplinary – includes social science, political science, law, communications, organizational management and decision science
- Not solely biology
- Use and interpret models, synthesize information, decision theory, risk analysis
- Evaluate fish in context of ecosystem, food security, employment, economic, social consequences
- Risk taker, apply alternative methods
- Non-traditional approaches—arbitration, facilitation, dispute resolution – requires group/organization process and management skills and training

Strategies:
- New fisheries curricula – social sciences (economics, anthropology), communication, organizational management, facilitation
- Training trainers
- Continuing education with credits
- Websites—reading lists
- Distance learning opportunities
- Internal and external internships (need financial support)
- Rotational assignments/cross-training; help develop fresh perspectives, new theories (need financial support)
- Establish certification programs or other continuing education incentives—rewards, compensation (need standards for certification—what is expected)
  - Example: U.S. Fish and Wildlife Service has a clear path to becoming an administrator
- Draw on different talent pools—recruit from non-traditional sources (graduates, existing for profit business, non-profit business management) and teach them fisheries sciences
• Avoid burn out, rotate staff through science, research, and management positions; sabbaticals to refresh

Why good workers leave:
• Limited advancement
• Lack of recognition
• Low salary
• Unhappy with management
• Bored with job

Strategies:
• Change work environment from litigious to partnership, governance, consensus
• Delegate decision authorities, reduce bureaucracies to raise job satisfaction
• Self imposed 1 percent tax on programmatic initiatives to support creation of next generation of scientists
• Fellowships/internships
• Secondary science education teacher training
• Faculty sabbaticals/adjunct positions with government (academics work with government)
• Curriculum development

Conclusions:
• Look beyond fisheries to broader population and employment trends
• Predict changing skill sets and decision frameworks managers will need
• Don’t wait, make strategic investments now—long-term strategy

Alain Laurec, ENSAR (Ecole Nationale Superieure Agronomique de Rennes)

Will provide reaction based on own experience.

1. Beware of false messiahs
   • New words hiding old concepts
   • Brave words – beware brave new words (“enlightened despot”)
### Decision-makers
- Politicians
- Top-level civil servants
- Operational managers

<table>
<thead>
<tr>
<th>Fish Industry</th>
<th>Staff</th>
</tr>
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<tbody>
<tr>
<td>• Fishermen</td>
<td>• Scientists</td>
</tr>
<tr>
<td>• Fishermen’s reps</td>
<td>• Administrators</td>
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<td>• Enforcement</td>
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<td>• Statistics</td>
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- There will always be common property problems
- Need dialog between these groups
- Example in Brussels: Minster of Environment trying to please the Greens; Minister of Fisheries—trying to please industry

2. Attracting, supporting, enabling skilled fisheries managers:
- Needs:
  - Money not enough
  - Working conditions; overall efficiency, clearly defined responsibilities
  - Social recognition
  - Future career prospects – death, retirement, neglect (risk of no job in a few years (?)

Other comments:
- Industry: fishermen know little of science (e.g., Stock assessment)
- Scientists: industry wonders why scientists are trolling in areas there are no fish
- Fish reps who have never been to sea
- Need system where decision can be achieved and everyone is explained why the decision was made (why the decision other than the one they were dreaming of has been made)
- Staff jobs—enforcement still important—many times enforcement officers are not explained the reasons for regulations, so they cannot explain these to fishermen
- Scientist—“fish management is not real science” —Science is new ideas (stop blaming science for not being applied enough); management: being repetitive is crucial
Mike Arbuckle, Ministry of Fisheries, New Zealand

- Background: worked in industry
- Topic: Linking capacity to opportunity in New Zealand

Outline:
1. Fisheries management in New Zealand
2. Identify ministry capacity gaps
3. Role and realignment of the fisheries management group
4. Stakeholder opportunities and capacity gaps

1. Legislative scene in New Zealand
   - 1986—Quota Management System (QMS)
   - 1990—Proportional quota
   - 1992—Deed of Settlement
   - 1994—Cost Recovery
   - 1996—New Fish Act (staged introduction)
   - 1999—Fish Management Plans
   - 2001—Devolvement of certain services

Institutional Response:
- 1995—Ministry established – research contracted
- 1996—Changing course 2010
  - Ecosystem based management
  - Collaboration, not direction
  - 5-year strategic plan (under review) – goals:
    - Leadership in understanding stakeholders
    - Framework for management process – Maori (Treaty of Waitangi; efficient use of fisheries resources)
  - Organizational redesign:
    - 1996 Act as driver: Ecosystem based; Maori input; tools for better stakeholder participation; outcome/objective focus
    - Change approach to fisheries management
    - Acquire new info
    - Gain new skills
    - Develop working relationships with Maori
    - Integrate processes
    - Educate and train staff
    - Develop functional units
    - Business plan
    - Fish plans
      - Principles
      - Directions
      - Opportunities for planning and delivery, integration
2. Gap Analysis

- Ministry:
  
  - Skills gaps:
    - Lacks leadership
    - Analytical skills—evaluation; risk analysis
    - Lacks facilitators and technical advisors
  
  - Needs:
    - Realigning, recruiting, training management staff
    - Defined role of Fisheries Management
      Group—implementation of strategies, plans, policies and legal obligations; tech advice on plan development; input requirements (monitoring etc.); regulatory decisions; evaluating and monitoring strategies and plans; contributes to policy framework development
    - Organization
      i. Management Support
      ii. Fisheries management teams:
        - Fisheries management project manager: includes business planning and performance, establish and monitor a Fisheries management program, manage large strategic projects, trains fisheries management staff
        - Fisheries management standards: sets and monitors standards, evaluates plan proposals against standards, research priorities
        - Fisheries management delivery: 6 teams (3-7) managed by operations managers, team leaders are senior advisors primarily responsible for technical advice to stakeholders (primarily Minister), also relationship management

- Industry:
  
  - History/gaps
    - Pre-1997—Fish Industry Board (FIB), Association (FIA), Federation of Commercial Fishermen (FED)
    - 1997—Seafood Industry Council established; agreement with FIB; disband FIA and FED;
    - Post 1997—CFS (?) as SeaFIC subsidiary, then taken over in 2000; changes in organizational structure—several industry stakeholder organizations (“Commercial Stakeholder Organizations”), limited skills and resources available
  
  - Skills Evaluation—Some training workshops; Initial Unit standards developed but not progressed: knowledge of…
APPENDIX E, cont.

- Investment analysis
- Basic economic model of renewable resources
- Economics of fishing firm
- NZ fish process
  o Fish plan framework—rekindle industry interest
  o Gap analysis needed

Plenary I, Day 2: Questions from audience

Q1. (for Arbuckle) What are the plans for improving capacity internally? – particularly for working with Maori (unit standards created by minority seafood council)

A1. Arbuckle: Treaty initiatives for strategy review

Q2. Regarding industry/scientist conflicts:
   - Problem of entirely political process
   - Challenge of moving whole system from one that is rules based
   - Litigation may be clearer than blind leading blind

A2. Lauric: In Europe it is hard to avoid political process. Until Europe is more integrated, politics will always be very strong; not possible to eliminate politics; they have nothing to do but manage to interfere.

Q3. Weakness with European system—fishermen and fish industry feel remote from decision-making processes; need to involve fishermen more; practical advice from fishermen; as part of process, they have a stake in the outcome.

A3. Holiday: What happens if fishermen are not well organized? Need to provide opportunity for representation from every organization, but can’t help if they are not organized.

Q4. Role of politician is important, but we have nothing to do with it. We can’t get away from the micro-management question. We need to let students know about the way things work so they know about complexity, finding common ground, etc.

A4. Arbuckle: micro-management is good in some ways.

A4. Lauric: Most are smart enough to be eager to get rid of fish problems; e.g., Austria’s discovery that they have fish (?)

Q5. What about leadership? Retention and rewards for people? How do we deal with the incentive problem when we reward for not taking risks and punish for taking risks? What is a practical resolution for this problem? (Litigious issues?)
A5. Holiday: Problem of political appointees who are only there for a short time...there isn't an institutional structure or incentives to encourage risks; However, for short term (3-4 yrs) it is a personal decision to take risks – take a risk knowing you will be thrown out anyway.

A5. Arbuckle: Risk is associated with the organizational structure you are in... need (?) professionals to support risk.

Q6. Problem of U.S. system being highly litigious – affects trust and respect? Do you agree? What is our ability to keep high-level managers willing to take risks?

A6. Arbuckle: need to provide equal chance to talk and some foundation for discussion; difficulties in developing real discussion without foundation.


Q7. Problem of not making the effort to explain to fishermen basis for decisions...whose role is this? What are the incentives for this to occur?

A7. Lauric: Hunting requires an exam but fishing requires no competency; people training fishermen need to cooperate with managers.

A7. Arbuckle: Cost recovery—recover costs to fund education of fishermen.

A7. Holliday: U.S. —Call for stewardship but no strategy or plan for carrying out education in schools and graduate programs; Denmark is more advanced, fishermen training is essential but there is no specific program, don’t have managers who do training to transfer info about “why?”

Q8. Sharing costs in co-op management programs provides incentives for true partnership (shared management and shared funding responsibility)

A8. Arbuckle: In New Zealand the cost of management is funded by the public.

DAY 2 Plenary 2: Flexible Learning Pathways
Chair
Lee Anderson, University of Delaware

We can create flexible learning pathways, but will they be used? Examples of successful flexible learning pathways for senior managers and leaders will be presented. Speakers will present their views on their chances of success for current fisheries managers.
Barbara Johnsen, NZ Seafood Industry Training Organisation (SITO)

Flexible:
- Delivery – flexible modes (e.g., night classes)
- Content
  - Tailor for learner/competence
  - Relevant
  - Recognize current competence
  - Gap analysis
  - Avoid frustration
  - Transferable – into another learning institution

Learning:
- Knowledge, skills (abilities), attitudes
- Define by outputs (outcomes we are seeking)
  - Valid assessment
  - What you want people to gain
- Owned by the learner – learner needs to be gaining
- Recognition (links to transferability)

Pathways (e.g., academic or continuing education)
- Identify the end point—learning outcomes (e.g., analytical thinking can be built up on the job or through other methods)
- Variety of places and modes
- Integration – there are more ways to learn than within an education provider (education, life experience, work); we need recognition of life experience
- Multiple, transferable pathways

What does this mean for emergent fisheries managers?
- Education provider issues:
  - Science and post-graduate focus
  - Hodge podge programs
  - Rely on “bubble up” effect – generic skills plus tack on FM training on top
  - Students’ attitudes (“environment” as learning driver)
  - Gain qualifications valued by stakeholders
  - Funding drivers
  - Ownership by academic groups
  - Consider typical courses that are found in academia vs. other providers

- Workplace issues:
  - Learning on the job
  - Poor recognition of learning —reduces transferability and affects career pathway
  - Narrow focus
  - Little recognition of formal qualifications—by industry in particular
  - Body of knowledge not shared with academia
• New Zealand Industry examples
  o Te Arahou (see: http://www.tokm.co.nz/main.htm) programmes designed to enhance leadership and management among Maori in the seafood industry
    - Emergent Maori leaders
    - Builds personal skills
    - Strengthens leadership
  o First-line management training
    - Education provider, outcome based
    - Delivery and content tailored to the company
    - National qualification – to recognize learning
  o Initial development of unit standards describing fisheries management competencies: outcomes of learning
    - “Industry” driven
    - Recognizes that knowledge and skills are gained in the workplace, not academia
    - Definition of “fisheries management”? 
    - Lack of education providers in this area – reluctance to use unit standards
    - Faltered, developed before systems in place

• Keys for success:
  o Emergent fisheries manager
    - Integration of education with workplace—real-world application of academic learning
    - Two-way sharing of knowledge/skills—builds mutual respect
    - Shared ownership of education—providers, learners, stakeholders; recognized non-traditional skills and knowledge; leads to recognition by stakeholders of value of education programs
  o Existing fisheries manager
    - Recognition of learning on the job
    - Ongoing professional development—education provider and workplace flexibility
    - Valuing of education by the existing and emergent fisheries manager (relevance, ownership)
  o Focus on outcomes: take the best of the past and head for the future

Michael Cloughesy, College of Forestry, Oregon State University
(Also see Appendix G)

Flexible Learning Pathways – A Forestry Extension Perspective on Curriculum Development

• Outline:
  o Forestry Extension and outreach
  o Model of curriculum development
APPENDIX E, cont.

- Natural Resource Curricula
- Elements of successful programs

- Forestry Extension and Outreach (OSU is a land-grant university; OSU has an oncampus academic program, research, and extension—bring education to the people):
  1. Woodland owner training
  2. Natural Resource Professionals – professional foresters
  3. Public policy training
  4. Watershed council training.

1. Woodland owner training:

```
Woodland Owner Education
Curriculum Pyramid

Advanced MWM

Master Woodland Manager

AWOP  MWM

Advanced Woodland Owner

MWM  AWOP

Resource Management Planning

Basic Forestry Shortcourse  Backyard Woodlands

Sequence of courses
```

2. Natural Resource Professionals – Education: This is demand side education (“extensionize” natural resource training; in past we had supply-side education where the professor creates the course)

3. Public Policy
   - Policy issues, understanding how to react
   - Skills, strategic planning, communicating with legislators

4. Watershed Council Training—response to salmon being declared endangered species:
- Model of Curriculum Development (Verduin – worked with adult education of intercity Chicago)
  1. Rationale – Why?
     - Target Audience identification
     - Needs assessment
  2. Outside political forces
     - Government agencies
     - Private organizations
     - NGOs
  3. Goal identification
     - General level—big picture abstract
     - Intermediate level—learning objectives for particular class
     - Specific level—very specific objectives
  4. Instructional activities and organization
     - Specific goal directed learning experiences
     - Hierarchy of KASAs (Knowledge, Attitude, Skills, Ability)
     - Assume entry level KASAs (identify “point A”)
     - Use prerequisites (if they don’t have these = special learning situation)
     - Adjust through feedback (during the class/course)—learner centered; if they aren’t learning, you are not successful
  5. Evaluation
     - Measure goal achievement
     - Formative—during class
     - Summative—end result
       - Inputs
       - Activities
       - Involvement
       - Reactions—attitude change
       - KASA change
       - Practice change—are they changing what they do?
       - End results

- Elements of successful program:
  1. Develop demand-driven program
  2. Identify and describe target audience
  3. Formal needs assessment
  4. Develop clear goals and objectives
5. Use specific learning activities to achieve educational goals – if the activity really doesn’t get at the objective, drop it; really address what you say you are going to do.
6. Formative and summative evaluation
7. Use feedback to adjust learning activities
8. Level 5 or 6 summative evaluation
9. Long-term client relationships
10. Allow multiple or flexible pathways (learner-based)

DAY 2 Plenary 2 – Discussion

Q1. Outputs – how do we assess?

A1. Cloughesy: Focus group, survey, observing actions; in forestry we use focus groups involving employers, these are often more deep than a survey.

Q2. Unit Standards?

A2. Johnsen: unit of learning, define standard of what people are learning; most of these are at lower level because that is where funding drivers have been; difficult to define standards (What do they have to do? How much of it do they have to do? etc.); but this is not unsolvable; need to look at specific roles and not try to be generic; focus teaching on bits they can do.

A2. Cloughesy: Example: community college competencies in U.S.—attempted five different roles.

Q3. Case study use: put college students together with returning professional students?

A3. Johnsen: we don’t do this in fisheries primarily since training is at lower level; in Pharmacy and other programs this is done; joint delivery is occurring in some sectors.

Q4. What about cost of training—who is paying for it?

A4. Cloughesy: Extension is funded by government (extension instructors paid by government); professional training is paid by participants—with costs based on needs assessment; executive level training: need to charge at least a certain high amount which lends some level of respect.

A4. Johnsen: Mixture of funding from agency, employers, and participants.

Q5. Industry—we have strategic plan/goals, but we don’t know what competencies are for this “new” employee? We need help with this definition.
A5. Cloughesy: Examples from forestry—Scandanavia—technical development; industry and universities got together to develop specialized training programs.

A5. Johnsen: Main question by providers—how many students can you guarantee? 3-4 per year vs. 30 at once.

DAY 2 Plenary 3: Workgroups – Opportunities and Pathways
Facilitator
Cher Williscroft, Sealord

Discuss the following questions and develop a workgroup response – the response may acknowledge agreement or disagreement within the group:
1. Quality people won’t be “delivered” if the responsible, professionally rewarding opportunities are not developed. How do we develop the opportunities?
2. How can programs be designed and delivered to ensure that they are accessed by a wide range of learners including existing participants in fisheries management?
3. What are the capstone areas that should be delivered to existing participants in fisheries management?

Note: Six groups, each included industry, government, and academia reps.

GROUP 1:
1. Developing rewarding opportunities for quality people
   - Multiple career paths
   - Opportunities within agency/organization for multiple career paths; opportunities to expand skills, upward mobility
   - Reward for success, acknowledgement
   - Involve them in decision-making process
   - Create some high-profile positions
   - Time and resources for professional development
   - Cultural differences—be sensitive to difference in how people look at resource management
   - Clarify career paths that are possible, competencies, opportunities

2. Design and delivery
   - Combination of degree programs and short courses with variety of delivery patterns – providers inside and outside
   - Construct a learning library, based on case studies, easily accessible
   - Continue/revise Training Fisheries Managers website – so others can access for training around the world, resource for potential students
   - Revise/create unit levels – allow for progress at different rates
   - Training programs should include aboriginal and non-aboriginal perceptions (difference in perceptions)
• Recognize and focus and encourage ability and potential beyond pure qualification standards
• Emotional intelligence

3. Capstone Areas—unable to respond

GROUP 2:
1. Developing rewarding opportunities for quality people
   • First question is for whom?
     o Professional fisheries manager?
     o Representatives involved in management process?
     o Other stakeholders
     o Emergent or existing
   • Incentives:
     o Profile of “fisheries”
     o Broaden opportunities—whole ocean and marine environment
     o Focus on people and their skill set
     o More reps. into fish management—ownership, influence, why we are here

2. Design and delivery of programs
   • Education/work/life experience
   • Wide range available
     o Accessible
     o Appropriate
     o Venue (fishing = rural; training = urban)
     o Tailored
   • Coordination
   • Trainer training trainer
   • Generic program—e.g., role of fisheries in society
   • Common difficulties for FM

3. Capstone Areas
   • Use skill list from Day 1, except for what people already do or know.

GROUP 3:
1. Developing rewarding opportunities for quality people:
   • Incentives:
     o Cross- fertilization
     o Specific projects with outcomes, provides some satisfaction
     o Clearly defined expectations (performance based)
     o Financial reward system (related to performance based)
     o Internal/external networking (travel, mentoring)
     o Recognition of individual capabilities and skills
2. Design and delivery of programs:
   - Know customers and requirements
     - Employers
     - Students
   - Modular approach
     - Include feedback, adaptation in this model
     - In person vs. tech or university based; consider client culture
   - Case studies
   - Certification program—if you do this, employers need to recognize the need for this.

3. Capstone areas: no comment

GROUP 4:
1. Developing rewarding opportunities for quality people:
   - Transfer from one career path to another not always recognized as good; but in fact provides a better mix
   - Industry structure makes it hard to get into management training vs. government, which has a larger structure (?) so it is easier to get into a specific career path
   - Reward people for moving up or willing to work at a specific level
   - Make fisheries management seem “cool” again

2. Design and delivery of programs:
   - Mentoring program
   - Breakdown division between groups, sectors, countries (e.g., opportunity for industry person to work in government)
   - Depending on the institutional system—there is a greater or lesser demand or interest in training; rights based or commons – rights based leads to better development of training system; if you don’t want to manage fisheries, you don’t need to train fisheries managers

3. Capstone areas:
   - Skills same as discussed on Day 1

GROUP 5:
1. Developing rewarding opportunities for quality people:
   - Obstacles to careers
     - Frustration
     - Negative perception of industry (U.S. perspective)
     - Academics frustrated in management
     - Attraction to NGOs
     - Norway—some leave their fisheries management career because they get frustrated, others stay
Keeping people in fisheries management is a problem that depends on the country and the system—e.g., it is not hard to keep a fisheries manager in Iceland

- Remedies
  - Job rotation
  - Recruitment from non-fish-related backgrounds
  - Training opportunities
  - Change public perception
  - Enable people to make a difference
  - May require changing management system?

2. Design and delivery of programs:
   - Flexible, short-term courses
   - Meet specific needs
   - Recognition of qualifications
   - Not just university courses
   - Human skills—is the best place in university?
   - Case studies—that people recognize
   - Demand and supply

3. Capstone areas:
   - Simulation models (management process, teaching tools)
   - Case studies (determine existing case studies with full information; create case study resource area)

GROUP 6:
1. Developing rewarding opportunities for quality people:
   - Reputation of organization
   - Organizational culture
   - The more difficult the environment, the more difficult to bring people in
   - Problem of student supply: attracted to other fields, focus on environment/NGO view (why do students choose fisheries?)
   - Strong leadership in organization
   - Need to know work is making a difference
   - Challenging projects
   - Industry leadership role
   - Work environment—work your hours, flexible hours
   - Career path—horizontal as well
   - Process/approach:
     - Governance—initiate change
     - Strategic—long term (social and natural science, lots of service from academic programs
     - Tactical and short term operational (registry, monitoring, enforcement)—not serviced as well, implementation—not much discussion in this workshop
2. Design and delivery of programs:
   • Coordination among programs – complete package
   • Minority programs

3. Capstone areas: no comment

Additional comments….
   • Facilitator will provide notes on summary and prioritize
   • Make the profession fashionable again – do this at the k-12 and undergraduate levels

END DAY 2 😊
DAY 3 – Friday 7 December 2001

Plenary 1: Ideas for Future Training Strategies
Chair
Michael Harte, Falkland Islands Government

Jon Sutinen, University of Rhode Island

University Perspective:
- Ecology of Fisheries Management

Solutions:
- Be more creative in finding ways to partner—government, NGOs, industry
- Teaching fellowships—someone from government or industry given time and money to co-teach with academic
- MBA/Public Admin. Partnerships
- Policy simulation exercises/lab (University of Rhode Island has lab with 30 stations, connected to GIS, can examine how policy affects the system.
- Distance learning—could include distant students in simulation exercise

Problems:
APPENDIX E, cont.

- Outreach/extension—is there a systematic framework?
- Educator rather than advocate
- Public officials are reluctant to learn?
- Property rights regime—problem of delivering knowledge to fishermen in this context
- Op Ed pieces by professors?

Poul Degnbol, Institute for FM and Coastal Community Development, North Sea Centre

Ideas for future training strategies:

- Institute Background:
  - Small institute
  - Knowledge transfer in management context
  - Research, advisory, implementation
  - Must work in Europe
  - Capacity in developing countries – don’t have to first dismount structures, which are counter productive to fisheries management…these projects work as a kind of “experimental lab” that we can learn from

- Building on what we have talked about – vision, capstone, gatekeepers, micromanagement:
  - Be relevant to the specific management plan
  - Provide coherent mix, include interdisciplinary and KASA (see Cloughesy presentation)
  - Target all groups involved in management process (pros, stakeholders, tech staff)
  - Support both implementation and innovation/strategy development

- Training for participation?
  - What does participation require?
    - Mutual respect
    - Normative and cognitive aspects: respect and integrate objectives of all; respect and use knowledge of all
    - Openness—two-way basis for dialog
      - Communicate “with” not “to”
      - Critical ability regarding other disciplines, roles, cultures
      - Reflectivity—critical assessment of own role (attitude blocks to participation – the need for reflectivity—e.g., poster header at conference in Oslo, 2001 was “100 years of excellence in marine science” and the header in the Norwegian paper article was “100 years of advice without effect” meaning science excellence without effect; it is possible to “enjoy” your own excellence without
realizing effect on society; ivory tower attitude versus anti-intellectualism block can also occur in the opposite direction.

- Understanding of fisheries management as based on decision-making process—including all complexities of multiple objectives/interests/cultures, disciplinary backgrounds, personalities

- Understanding of implementation modalities
  - Can general “human skills be taught? Or can we develop these systematically on the job?
  - Can specific understanding of other partners and decision-making process be taught? On the job?
  - Taking care of business while attending to need to innovate/develop a creative and rewarding environment?
  - Can learning be shared among partners in management process?
  - Can we use the fact that individual and institutional learning are interdependent and synergistic?

- Training modalities
  - Outside job—university courses for agency staff, external internships
  - Within job—internships and rotation
  - Within process—internalize training in the management process

- Fisheries management as a learning process
  - Adaptive learning important
  - Learning may take place unconsciously (unstructured), but may be more efficient when conscious/structured
  - Process learning—development of process and of individuals participating

- Process learning modalities
  - Ongoing evaluation of outcomes—participatory planning and evaluation; add research component to management process and feed results back into process (e.g., co-management research project); process of continued review can be immense learning process
  - Ongoing evaluation of process—follow-up on process assisted by observer/facilitator
  - Case study production:
    - Document process and outcomes
    - Basis for courses
    - Role play—decision process
    - Simulation games—technical evaluation
    - Web library
    - Contents? Format standard?
    - Base for individual learning out of context
Incentives and outcomes

- Universities: access to management process, primary data for research
- Stakeholders (include agencies)—systematic learning, relevant issues, disciplines from specific context
- Individuals: participation in innovation, critical and reflective environment

John Goodlad, Shetland Fish Producers Organization

European Perspective:

- Big Change
  - People who manage fish have changed – were civil servants
  - Fish organizations role = lobby group – now fishermen through user organizations have increased responsibility for managing fisheries (now central to the fisheries management process in U.K.)
  - Many different management methods
  - Decisions are made by fishermen themselves
  - Change and challenge – unprepared for this development – not one of these fishermen’s organizations went to a “short course”; however, in the past, none of the civil servants went to “short courses”; fisheries secretaries only received basic briefings; all working on basis of the little they know

- Current problems
  - Poor communication—e.g., enforcement officers can’t explain why regulation exists
  - Different objectives
  - Mistrust
  - Sectoral interests
  - Cultural differences

- What can be done?
  - International database of courses
  - Exchange of experiences and ideas—international
  - Formal linkages—establish a network across and between levels; international (e.g., Jr. fish minister in Norway comes from fishing industry)
  - Secondments/internships/formal exchange program
  - Standing committee to ensure that these idea occur—make sure something is done.

Brent Marshall, Moana Pacific Fisheries Ltd., New Zealand

- Great managers exist in many different sectors, from fishermen on boat to leaders in industry, science community, eco-sector

Funding needed
• Experts have talked about something I know nothing about
• Areas in New Zealand where we are leaders, others where we fail
• “Right skills, knowledge, attitudes—but actually looking for appropriate legal frameworks (keep us from giving up on management—e.g., rights-based allocated fisheries that are difficult problems to solve)
• Example: Story of endangered Hectors dolphins—North Islands

| Note takers comment: for reference purposes, you might see the following links: |
|-------------------------------|-----------------|
| http://www.hectorsdolphin.org.nz/ | |
| http://www.executive.govt.nz/speech.cfm?speechralph=35719&SR=0 | |

- Last year the Hectors dolphin started to become an issue
- Conference in May – first time industry was briefed on this program
  - Scientists came to talk about Hectors dolphins
  - ~ 100-130 in population
  - Geneticist gave presentation on extinction, had to determine if this is a species or subspecies or separate population – determined that the N. island population is separate from the S. island population; concluded that no matter what you do, it doesn’t affect the outcome
- Legislation required industry to do something about the problem
- Result:
  - Industry developed plan for partial closure of area with dolphin sightings; plan included gear restrictions and pingers outside the closure area …this would remove industry from having an effect
  - Industry sent public relation information to schools, media; held public meetings; listened to input; involved review committee of stakeholders
  - Had government support of industry decision
  - Thought to be a good model of the process of fisheries management
  - Proposal went to minister
  - Minister made new proposal that went way beyond recommendations—he proposed total closure; thus the entire process was destroyed
  - In the end, not real benefit to dolphins since fishing community had proposed funds to support more science
  - Politics got in the way of process
DAY 3 Plenary 2: Workgroups – Putting the ideas into practice  
Facilitator  
Miranda Cassidey, Folkus, LTD.

(Workgroups were reformed into Academic, Government, Industry; these were not composed of exactly the same people as in the workgroup session on Day 1.)

1. Which ideas does the workgroup support?  
2. If there are good ideas, what are the key barriers to making them work and what steps can we take to overcome them?  
3. What actions could workshop participants undertake over the next 12-18 months to achieve these ideas and strategies? (top three most likely to have impact)

WORK GROUP RESPONSE:

**Government 1:**
Top three:  
1. Broaden career path  
   - Recruit from a broader range of disciplines  
   - Whole of sector is open for career path  
2. Create improved environment for:  
   - Mid-level managers  
   - Salary structure flexibility  
   - Improve development opportunities, travel, conferences, internships, secondments  
3. Gap analysis and structural development program  
   - Courses  
   - Experience  
   - Mentors  
   - Who is the program appropriate for – sectors

Barriers:  
- Institutional inertia—within (work overload) and between  
- Lack of understanding by stakeholders

Overcoming Barriers:  
- Agencies meet with training providers to help ensure training content and format is appropriate; review and format of courses/content

**Government 2:**
Top three:  
1. Establish institutional body to carry on from meeting  
2. Communication strategies  
3. Clarify fisheries management targets for training and develop curricula; focus on top-level managers and cultural issues
APPENDIX E, cont.

Barriers:
- Money
- Leadership
- Time
- Practicality
- Accessibility (local, global, time)
- Appropriate service providers for training
- Identify those responsible for regional planning
- Cultural diversity
- Institutional framework and terms of reference

Overcoming Barriers:
- Establish steering committee
- Build on successes:
  - Webpage with training programs
  - Curriculum development
  - Case study development
  - Secondments
  - Examples of early success that steering committee can work on
- Inclusion of all groups (enforcement must be included—hasn’t been included in our discussion)

Industry 1:
Top ideas:
- Practical process
- Purchaser (who is the purchaser?)
- Identify gaps in skills and training needs—minimum level for all
- Flexible learning
- Expertise

![Level vs Sector or type of manager](image)

Minimum level for all = basics
Barriers:
- Institutional inertia
- Costs
- Personnel movement

Solutions:
- Communications
- Involvement
- Actions—training, development, institutional cooperation

Industry 2:
Top three: (context = actions that can be accomplished in next 12 months)
1. Develop international FM training website:
   - Make sure database is comprehensive with links (including stakeholder training)
   - Search engine
   - Multilingual
   - Links to other agencies, industry
   - Public relations to industry, schools, counselors, etc.
2. Gaps in coursework:
   - Process to transmit sense of history and context of management
   - Example—fisheries history
3. Tool for facilitating internships
   - Secondments, internships
   - Area to post resume
   - List of programs interested in accepting interns and programs that support internships
   - Use website to facilitate internships via international efforts

Barriers/overcoming barriers:
- Need to establish steering committee

Academic 1:
Top three:
1. Scholarships from industry—this would be signal from industry and ensure students have a basic familiarity with industry
   - Barriers: N.Z. industry would be willing; U.S. industry would probably be willing but just need someone to do the work, fragmentation at the catch level, but industry organization could do this.
   - Actions: someone needs to do the work to solicit funds, but not impossible
2. Experiments/simulations—e.g., simulation/policy modeling lab at University of Rhode Island
   - Barriers: funding, time, expertise, getting people to participate (motivation, interest, time)
   - Actions: existing labs used if funding provided for training programs
3. Case Studies:
   - Barriers: funding, getting people to develop cases
   - Actions:
     - IIFET as possible coordinator – special sessions at conference for presenting cases, provide structure, clearinghouse
     - Cases in Marine Resource Economics – a section in each issue or a whole issue devoted to case studies
     - Survey to determine existing cases – already used in courses, literature search

Academic 2:
Top three:
1. Establish library of case studies for fisheries management
   - Video case studies
   - Written
   - Policy simulation software
   - Need process/standards, templates
   - Include a learning/evaluation component
2. Network of training providers and users
   - Someone to coordinate, head up network
   - International needs assessment by sector
   - Launch at fish conference in Vancouver
   - Leadership, accountability
3. Peer exchanges
   - Managers and agency people
   - Share experiences
   - Cost sharing
   - Highly focused

Barriers:
- Leadership
- Time
- Incentives
- People/students
- Funding
Summary of Key Ideas:
- Marketing the need for quality people:
  - Attract people to training and to industry
  - Need for training
- Establish network
- Website as a vehicle for one stop shop for all proposed
- Identify next steps/plan to go forward – steering committee
- Gap analysis – suppliers vs. demand by sector
- Maintenance of people
  - New, emerging
  - Existing
- Internships/secondments
- Inclusive – cultural aspects/understanding

Actions we will take:
- Develop infrastructure to carry on initiative
- Develop case study concept—with web-based delivery (flexible arrangements?)
- IIFET(International Institute of Fisheries Economics and Trade)—inform, increase interest
- Set up steering committee—national, international
  - Initial committee is Susan Hanna, Gil Sylvia, Jonathan Peacey
- Steering committee meets at IIFET
  - Discuss IIFMP
  - Terms of reference or funding
- Workshop results made available
- Work within our own countries develop funding potential
- Funding?—NOAA, EU, NATO
- Partners?—IIFET, FAO, World Bank Fisheries initiative?
- Sign consensus statement today (this did not happen)
- NMFS will take results and apply—as a sponsor, will evaluate and follow-up

DAY 3 Plenary 3: Looking Back, Looking Forward
Chair
Susan Hanna, OSU

Bruce Morehead, National Marine Fisheries Service

Interesting ideas:
- KASAs
- Pathways to training

Significance to NMFS
- Doing some of this, but mostly ad hoc
- Some type of rotational experience – example, council reps with agency
• Conceptual framework in identifying target audience for training
• Background/fundamentals – agency council members
• Continuing processes? – Can certainly share ideas, take advantage of some of existing venues, use partnerships, lots of great ideas
• We appreciate this workshop/effort

Mark Edwards, Ministry of Fisheries
(Substitute for Whaimutu Dewes, Treaty of Waitangi Fisheries Commission, who had to leave early)

Important elements – what will motivate us?
1. What is your response to describing part of your FM job that is training/education?
   • Now we will have a clear definition of vision, role, knowledge, participants at different levels
   • Undertake a gap analysis/needs assessment – critical to design
   • This framework gives us more confidence to engage in the process of training
2. All stakeholders – have a stake in outcomes:
   • Evaluation
   • Coordination
   • Sharing information
3. We have a big list of what is needed for all – knowledge, skills, etc. – what has been acknowledged here
   • Integrate disciplines
   • Enough to recognize implications and value
   • Apply them to the job
2. Values/drivers
   • Challenge of work: never bored, always crisis, angry people to get you motivated
   • Satisfaction of making contribution
   • Cultural impediments to participate
   • Priority of lifelong commitment to learning and development is key
3. Other comments
   • Decision making—odd number of people, three people too many
   • New Zealand facing many of the same challenges
   • Core range of objectives
   • This workshop was valuable, just for a change of discussion and commitment to the future
   • Workshop as a training exercise in itself, learn from mistakes, identify change drivers
   • Progressive cooperative thinking on FM training
   • Assure you this has been valuable
Susan Hanna, Oregon State University

Final comments:
- Despite variety of sectors, we had common themes
- Best step in planning was to identify participants
- Impressed with level of knowledge and discussion, particularly courtesy and respect for others
- We clearly have human capital to go forward, also we have a defined structure

Gil Sylvia, Oregon State University

Final comments:
- Even though there were extended discussions about who is a fisheries manager, we all learned from these discussions
- This is an impressive group that has come together

END DAY 3 ☺