



Report of the

Third External Programme and Management Review

of the

WorldFish Center

Overview Documents

SUMMARY AND RECOMMENDATIONS

This is the report of the Third External Program and Management Review of the WorldFish Center and covers the period 1999 to 2005. During this time, the Center has undergone major changes: It moved its global headquarters from the Philippines to Malaysia, it changed its public name from ICLARM to WorldFish, executive and Board leadership changed and the Center implemented two new strategies and re-structured its programs. Indeed, the Center is still in transition in many respects, a healthy sign in the Panel's view.

The Panel conducted the third EPMP in two parts. A retrospective part assessed the outputs and achievements of the Center, based on the old program structure, which was in place for the greater part of the review period. For the prospective part of its assessment, the Panel considered the current mission, strategy and organizational structure of the Center and its new programmatic thrusts to examine how well it is positioned to meet its goals and objectives. The Panel's assessment was facilitated by *inter alia*, documentation provided by the Center, briefings by the Center, SC and CGIAR Secretariats, views obtained in meetings and/or interviews with the Board members, previous board chairs, the previous Director-General of WorldFish, donors and a range of stake-holders, as well as visits to four countries.

Vision, Mission and Strategy

Against the backdrop of the many changes that occurred in the external and internal environment during the review period, WorldFish made significant efforts to update its Vision, Mission and Objectives and to propose to its partners, donors and other key stakeholders new perspectives on fisheries and aquaculture that address the challenges of sustainable development, consistent with CGIAR goals. The Center elaborated a Strategy update in 2005 to respond to the challenge of meeting the Millennium Development Goals (MDGs) with a fish focus. The direct interventions are with regard to the eradication of extreme poverty and hunger, to ensure environmental sustainability, the promotion of gender equity and the empowerment of women. However, flows of benefits would accrue to the other MDGs. The strategy update provides details of the processes and mechanisms the Center will pursue in order to generate various outputs that ultimately contribute to achieving the MDGs. However, no detailed programs or milestones for an assessment of performance in the medium term have yet been elaborated. The Panel believes that the Center needs to make key choices, limit itself to a few strategic areas of work, and be selective in its choice of partners. Institutional KPGs and related quantitative indicators mirrored in the CGIAR's Performance Monitoring System have been elaborated in the MTP 2006-2008.

WorldFish is in the process of implementing its new program structure based on a matrix structure of three global disciplines (Natural Resource Management, Aquaculture and Genetic Improvement and Policy, Economics and Social Sciences) and interacting with six to eight regional portfolios. Several organizational steps have been taken by the Center, including the definition of roles to provide clarity and alternative career streams for scientists based on their skills and interests, and modification of the process to avoid problems typically associated with the matrix structure. The Panel sees merit in adopting the matrix management approach and was informed that the structure has been working well

thus far. However, it wondered whether the Center was not underestimating the difficulties in implementing its matrix. Among the perceived or potential difficulties are the possible drift towards short term projects, tensions between Discipline and Portfolio Directors, increased transaction costs, the lack of a critical mass of scientists, the lack of well specified long term goals and, based on the latter, the need for the right balance between the disciplines. Some of these issues can only be addressed after the Center has more clearly articulated its chosen research domain, defined Center and program level research priorities and identified its positioning along the R-D value chain for each major objective specified.

Accomplishments and Impacts

Despite the potentially disruptive effects of the relocation of the headquarters, the research output has, in general, remained steady and staff have continued to produce a wide range of outputs, some of which have made significant contributions to science.

In the area of biodiversity and genetic resources, transfer of the GIFT methodology to other areas including Africa or other species (Asian carps) represented a key contribution of WorldFish to the definition of efficient genetic improvement strategies for tropical aquaculture. This was further enhanced by the strengthening, expansion and change of emphasis of INGA, making it more actively involved in the development of genetic improvement programs, and in particular in multiplication and dissemination of the improved stock.

WorldFish developed innovative restocking and alternative livelihood options for sea cucumber (beche de mer) fisheries and is now re-focusing the biological work using a more comprehensive approach in which culture and restocking are seen as one management tool among many in small-scale fisheries. The Center also produced *Bayfish*, a decision-making tool that utilizes data on species and habitat diversity in developing modelling approaches that link fish production and hydrological patterns in the Greater Mekong Region. In addition, the WorldFish partnered with NARs and ARIs to produce *Trawlbase* and has continued to upgrade and maintain *Reefbase* and *FishBase*, the world's premier source of information on all fish species.

Methodologies and technologies for promoting pond and rice field based aquaculture and the efficient use of wetlands have been elaborated and validated. Over 200,000 farm families have adopted the Integrated-Agriculture-Aquaculture (IAA) technology. WorldFish conducted two impact assessments that validate the relevance of their research (i) on the development and dissemination of GIFT fish in six countries, and (ii) on the development and dissemination of IAA technologies in Malawi. GIFT tilapia are now farmed in 13 countries where they contribute to increasing the supply of low cost, high quality protein for the poor. In terms of past and projected impacts, the internal rate of return (IRR) from GIFT research, dissemination and related activities over the period 1988 to 2010 has been estimated at 70%. In a similar manner, the adoption of IAA in Malawi has reduced childhood malnutrition by 15%, increased the number of fish farmers from 400 (1980) to 4000 and increased total annual fish production by more than 160 percent. Considering only *ex-post* effects, the estimated IRR from IAA research, dissemination and related activities already achieved is 15%.

Especially important has been the production of global and regional models on fisheries and aquaculture supply and demand, which have been widely commended for providing key information for policy design and implementation. Co-management research conducted in Asia, Southeast Asia and Sub-Saharan Africa has resulted in the creation of fisheries community organizations, the establishment or modification of fishing rights and the establishment of sanctuaries. It has also led to the production of guidelines for participatory approaches to management and development

Quality and Relevance of Science

The quality of science produced by the Center, as measured by outputs in international refereed journals, has declined since 1999. The annual mean number of scientific papers per scientist was less than one during the review period. This is below the internationally accepted norm.

However, the Key Performance Goal for all scientists in this respect has now been set at a minimum of two refereed papers per year, and the Panel was given evidence that this target will be met for 2006.

Notwithstanding the poor publication record, much of the research being carried out by the Center is highly relevant to its partners and clients. This is exemplified by the internally published reviews, booklets and pamphlets produced for specific audiences and conveying vital messages, which are widely used and applauded by a wide range of NARS and NGOs. Center staff received nine prestigious awards during the review period, further reinforcing evidence of the relevance of their research to stakeholders.

Partnerships and Linkages

One of the key factors in WorldFish successes during the period has been its strong working relationships with NARs and NGOs and the effective use of NARs networks of both within and between countries to address common issues and concerns. In addition, the scope and quantity of WorldFish involvement with other Centers is significant and the latter provided a favourable assessment of their collaboration with the Center. The Center has entered into a Strategic Alliance with IWMI to share Corporate Services. Both Centers have voluntarily engaged in this process that will likely result in improving complementarities between their programs. The entire process seems to be in line with the program and structural alignment, which the CGIAR is now exploring, particularly in SSA.

WorldFish is making substantial progress in the clarification of its relationship with FAO, which is a key partner for many activities. At the same time, the Center continues to establish strategic partnerships with ARIs in a few key areas, aimed at strengthening its scientific staff and improving its international image.

Governance

Overall, governance processes and institutions at WorldFish are adequate but need strengthening in several areas to reach required levels of excellence in terms of international best practices. There is scope for improving the competency profile of the Board in areas like financial and accounting appreciation. The Panel was informed that action in this regard has

already been taken. Board size and structures, however, appear geared for a much larger size of operation, and need correction in the near term.

The Panel perceives a need to strengthen external advice and counsel in matters of science to assist the Board and the executive, and a Science Advisory Committee for this purpose is considered useful. The Panel was informed that that a proposal to this effect is due for discussion at the Board meeting in March 2006.

The Annual Report of the Center, which is a valuable communication medium to all stakeholders is currently published late into the following year. The Panel believes that advancing the publication dates substantially, and including audited financial reports, would significantly enhance its value.

Management

WorldFish has managed the physical transition from the Philippines to Malaysia and established facilities in Penang extremely well. Its executive management structure has been reorganized into a matrix of Disciplines and Portfolios, with necessary support structures. Its ability to attract and retain staff of the right caliber, however, needs further strengthening, without which, it will be hard pressed to achieve its ambitious goals. In terms of its financial accounting management, there seem to be some areas that need strengthening. Internal controls assessment and risk management are beginning to be addressed and there is a need to further improve legal compliance and intellectual property safeguarding. SAP has been introduced and is expected to offer better service delivery in terms of information support and management.

An important issue relating to charging projects imputed rentals for space occupied at Headquarters (where the land is leased at a nominal rent from the Malaysian Government) needs a comprehensive review by the Board taking into account all relevant factors such as the Center's Constitution which mandates it as a not-for-profit organization, the Host Country and Land Lease agreements with the Malaysian Government, transparency and disclosure to donors, and so on.

Some IP, gender and diversity, and employee attrition issues have been discussed; the Center is fully cognizant of these matters.

Shared services as a cost-containment exercise under discussion with IWMI is a welcome initiative; thoughts of extending such service offerings to other CG Centers in future, as appears to be the intention, however, is an area where the Center needs to proceed with caution, having due regard for host country land lease agreements and other relevant aspects.

Business development in the last two years of the Review period has been impressive, with substantial funding growth. The Center should redouble its efforts in internal capacity building that will be required to handle the increased activity levels in the years ahead.

Conclusions

Despite the extensive changes that have taken place within the Center, WorldFish is undergoing a gradual transition. The Panel has raised a number of issues from its evaluation of the Center's programs, governance, management and finance, and has made recommendations and suggestions for improvement. However, the overall assessment of WorldFish's performance over the period in review is positive. The Panel confirms that donors' funds had been well invested, and on this basis WorldFish should be a Center of choice for future investments by donors. The task ahead will be challenging for the Board, Management and staff of the WorldFish Center, but the Panel is convinced that it is moving in the right direction to achieve its goals.

Recommendations

1. As the matrix management structure is likely to exert a considerable influence on the performance of the Center's research programs, the Panel recommends that the Board commissions an external review of the new research structure by mid 2007 to specifically examine the effectiveness and impact of the matrix approach, the extent of transaction costs incurred and the acceptability by different levels of staff.
2. To broaden the staff resource base and maximize its efficiency, the Panel recommends that, within the framework of strategic alliances and the growth strategy of the Center, a pragmatic strategy is defined for leveraging additional resources through a range of joint ventures, including but not limited to co-financing of PhD grants, postdoctoral grants, associated scientists/laboratories in advanced research institutes and calls for joint research proposals.
3. While welcoming the potential creativity from and fruitful interactions between Disciplinary and Portfolio Directors, the Panel recommends that WorldFish identify and embrace a limited number of key scientific issues and research objectives that could be achieved within a reasonable period of time (4 to 6 years) and that could:
 - stimulate WorldFish scientists of different disciplines and promote interdisciplinary research;
 - be recognized by the scientific community as cutting-edge research and, as a result, stimulate collaboration with scientists from both developed and developing countries;
 - demonstrate the comparative advantage of the Center and its leadership capacity in the field of aquaculture and fisheries for developing countries.
4. To better understand the way selective breeding changes biological growth parameters, the Panel recommends further studies on GIFT be undertaken by geneticists and nutritionists working together, using more controlled experimental conditions, and testing a large range of feeding levels.
5. In order to ensure that its development oriented partners are better equipped to scale out methodologies and technologies for enhancing outcomes and impacts, the Panel recommends that WorldFish:

- continue to make a conscious effort to move away from downstream development activities and explore opportunities for development-related activities to be executed by local or bilateral entities, where available, while the Center continues to monitor and evaluate the activities/developments in order to analyze the impacts and also to identify constraints and bottlenecks which might require further research;
 - undertake a scoping exercise to identify its partners' strengths and weaknesses in order to better target capacity building, especially of NGOs, to advance the development spectrum of its work; and,
 - synthesize and package existing information, including frameworks, manuals, protocols and guidelines to ensure greater dissemination and use of its products.
6. While acknowledging the key role of FishBase within the newly defined NRM priorities and strategic directions, the Panel recommends that WorldFish clearly define its continuing involvement and role in the database, including specifying how the various demands on staff will be met.
 7. In search of appropriate tools for decisions making, the Panel recommends the Center expand its modelling work on the supply and demand of fisheries and aquaculture and undertake additional ex-post impact assessment in aquaculture, paying particularly attention in both cases to technological environmental impacts and non-negligible dynamic (inter-temporal) effects of fisheries and aquaculture activities.
 8. Considering the rapid development of aquaculture in developing countries and the increasing demand for dissemination of a few improved strains, from sometimes only non-local species, the Panel recommends that future efforts be made in defining on a pragmatic and objective basis, the acceptable dissemination area of an improved strain, and the realistic monitoring that should be implemented in relation to this dissemination.
 9. In view of the critical role of the PESS discipline within the Center, the current breadth of its tasks as outlined in the 2006-08 MTP agenda and its current staff composition, the Panel recommends that the Center take action on the following:
 - secure a Discipline Director as soon as possible;
 - conduct a strategic process of research planning and prioritization that enables the discipline to more precisely identify its research domain and a selected set of issues to produce significant IPGs; and,
 - develop and apply a balanced growth policy for qualified scientific staff according to research priorities.
 10. Bearing in mind that many activities under fast track opportunities within the WorldFish – NEPAD initiative go beyond the realm of fisheries and/or aquaculture, the Panel recommends that WorldFish explore opportunities for collaboration with other CG Centers, in particular IITA, WARDA, IRRI, CIFOR, IWMI, IFPRI and ICRAF, possibly within the context of task forces, to identify gaps in the application of IAA technology and methodology or for activities related to fisheries governance.

11. Given the poor scientific publications record and its current limited scientific expertise and reputation, the panel recommends the Center give high priority to:
 - recruitment of senior scientists with a proven track record *or* the involvement of such scientists in Center projects through various forms of partnership and adjunct arrangements, and
 - recruitment of a cadre of younger, recent PhD graduates, particularly in view of present and past difficulties in attracting more senior scientists.

12. In view of the importance of partnerships as a vehicle for achieving the goals of the Center, the Panel recommends that WorldFish:
 - elaborate a Partnership Strategy focusing on, among others, the *modus operandi* for establishing strategic partnerships and alliances that would add significant value to the current research activities undertaken by the Center;
 - explicitly define the roles and responsibilities of the Center relative to its partners in all major projects;
 - determine its positioning on the research-to-development continuum, within the framework of an impact pathway analysis, for all major projects; and
 - elaborate a human capacity building policy for its staff and its partners taking into account, as appropriate, the suggestions that have been provided.

13. In order to bring about greater cohesion, process improvements, trustee participation and contribution, and board-costs containment, and to enhance the quality of independent science support, the Panel recommends that the Center's Board and Board Committees be restructured as follows:
 - reduce the Board size to not more than nine Trustees, including the ex officio Director General, Host Country representatives and the FAO nominee;
 - modify Board Committee Structure to retain the Audit Committee, the Nominating Committee, and the Executive Committee, and eliminate the Program Committee;
 - include in the Center's Annual Reports a Report of the Trustees, discussed and approved by, and signed on behalf of, the Board, and Audited Financials, duly certified by the Director General and the Chief Financial Officer, along with the Independent Auditors' Report;
 - constitute a Science Advisory Committee of about four members with suitable qualifications and experience/expertise, with a member of the Board as the Committee Chair. The Committee will report to the Board, and the Committee Chair (or any other member other than the Director General) should brief the Board at every meeting on its deliberations and advice; and,
 - process expeditiously planning for CCERs on a five-year rolling time frame, to be updated each year, to obtain the best panelists with adequate advance notice, and spreading the workload evenly over the period. The CCER Panel Chairs should be requested to make the presentations to the Board on their Reports and Recommendations.

14. Given the importance of maintaining reserves at prudent and yet not unduly excessive levels, the Panel recommends that the Center continue to accord this matter very high priority and importance so that necessary and appropriate allocations are expeditiously approved and utilized.

15. Given the status of WorldFish as an international not-for-profit organization, having regard to the letter and spirit of the agreements with the Malaysian Government in respect of the leased land, and to ensure that as a CGIAR affiliate, the Center follows the best practices in accounting and reporting, the Panel recommends that the Center should revisit and comprehensively review this recovery methodology in all its aspects, seek directions from the Audit Committee and Board urgently, and adopt an appropriate policy that would be consistent with the its Constitution mandating it as a not-for-profit organization, and in full compliance with the Host Country and Land Lease Agreements with the Malaysian Government, and transparent disclosure to, and concurrence of, the donors, if any such recoveries are proposed to be continued or commenced afresh.

Ref # : DG/CGSEMT/170306-1

17 March, 2006

Dr. Per Pinstруп-Andersen Chair Science Council	Dr. Francisco Reifschneider Director CGIAR	Dr. Ruben Echeverria Executive Director Science Council Secretariat
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Dear Drs. Pinstруп-Andersen, Reifschneider, and Echeverria,

The WorldFish Board of Trustees, together with Management, considered the report of the 3rd External Program and Management Review (EPMR) when it met in Penang from 6-9 March 2006. The present document provides our response to the Panel's recommendations. We also take this opportunity to express our appreciation to the Dr. Ben Satia, the Chair of the EPMR Panel and his colleagues for the considerable effort that they put into the review process.

The EPMR has been very timely, coming when the Center has revised our Strategy and restructured our science team. The EPMR has also coincided with a new Chair of the Board and with steps being taken to improve the efficiency and effectiveness of our Governance and Management. We welcome the insights that the EPMR has provided in these different areas during this important period of change.

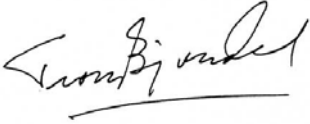
We also welcome the Panel's explicit recognition of the impact of our work on poverty, and will be seeking to increase this as we implement our Strategy by strengthening our focus, partnerships and internal capacity. We welcome warmly the Panel's conclusion that the Center has been a good investment for our donors and also welcome their support for the directions now being taken by the Center. We are pleased that many recommendations converge with initiatives already underway in the Center to strengthen regional impact, increase science output, improve management efficiency, and streamline governance. We note the Panel's call for increased staff capacity in order to meet our goals. We recognize that this and other recommendations will require increased funding and we look forward to working with the CGIAR and investors to achieve this.

We are pleased that the Panel has highlighted the Center's successes in several areas, notably fish breeding and dissemination of the GIFT methodology, in integrating fish culture into farming systems in Asia and Africa, in restocking and management of marine species for alternative livelihoods, in community management of fisheries, our global and regional databases, and our work on global and regional models of demand and supply. The Panel has recognized that one of the key factors in our success has been our strong working relationships with NARS and NGOs and effective use of NARS and NGO networks.



We also welcome the Panel's recognition of the Center's work with other Centers, including our strategic alliance with IWMI to share Corporate Services. We express our appreciation to our colleagues in other Centers who reported a favourable assessment of their involvement with WorldFish.

With kind regards,

Handwritten signature of Prof. Trond Bjørndal in black ink, featuring a stylized 'T' and 'B'.

Prof. Trond Bjørndal
Chair
The WorldFish Center Board of Trustees

Handwritten signature of Dr. Stephen J. Hall in black ink, with a clear 'S' and 'H'.

Dr. Stephen J. Hall
Director General
The WorldFish Center

RECOMMENDATIONS AND RESPONSES

- 1. The Panel recommends that the Board commissions an external review of the new research structure by mid 2007 to specifically examine the effectiveness and impact of the matrix approach, the extent of transaction costs incurred and the acceptability by different levels of staff.**

WorldFish Response: AGREED. One of the features of the Center's updated Strategy is that we are committed to reviewing progress regularly and using dialogue amongst key staff to develop mechanisms for improving operational effectiveness and delivery. This process is tracking performance of the matrix and our assessment so far of its effectiveness and impact on the quality and impact of our science is positive. However we agree that external reviews provide a valuable mechanism for assessing functioning of the matrix as well as other aspects of strategy implementation. With this in mind the Board of Trustees has requested that a rolling programme of CCERs be presented to the BoT at its meeting in September 2006. This will include a Center-wide review of progress with implementation of the Strategy, including the effectiveness and impact of the matrix approach. We will schedule this Center-wide review in 2008, so allowing assessment of a full 3 years of operation of the matrix and 2 full years since completion of the Strategy Update.

- 2. The Panel recommends that, within the framework of strategic alliances and the growth strategy of the Centre, a pragmatic strategy is defined for leveraging additional resources through a range of joint ventures, including but not limited to co-financing of PhD grants, postdoctoral grants, associated scientists/laboratories in advanced research institutes and calls for joint research proposals.**

WorldFish Response. AGREED. We are completely in agreement with the need to broaden the staff resource base available to the Center and are already implementing a number of mechanisms such as Senior Research Fellows, sabbatical arrangements, part time appointments, joint appointments with other CGIAR Centers, and Adjunct Professorships, to help achieve this. These however need to be expanded and specific approaches are being developed by the Discipline and Portfolio Directors. In doing so we believe that the approach being taken to strengthen the Center's science focus and capacity through the Disciplines, and to strengthen our regional partnerships and impact through the regional portfolios is making the Center an even more attractive partner for ARIs and other sources of this science capacity. To further strengthen our focus on these issues the Center is committed to developing a policy on such opportunities for leveraging additional resources and a strategy for implementing this.

- 3. The Panel recommends that WorldFish identify and embrace a limited number of key scientific issues and research objectives that could be achieved within a reasonable period of time (4 to 6 years) and that could:**

- **stimulate WorldFish scientists of different disciplines and promote interdisciplinary research;**
- **be recognised by the scientific community as cutting-edge research and, as a result, stimulate collaboration with scientists from both developed and developing countries;**
- **demonstrate the comparative advantage of the Centre and its leadership capacity in the field of aquaculture and fisheries for developing countries.**

WorldFish Response. AGREED. While we believe that the Center has already pursued a focused approach to a limited number of scientific issues and the results of this are reflected in some of the successes highlighted by the Panel, we also believe that the Center needs to continue to do so, and indeed increase the focus and impact of this work. To this end the Discipline Directors for NRM and Aquaculture are developing research strategies for these Disciplines that are designed to provide just such a focus for the Discipline for the next 5-10 years. These research strategies are being developed in concert with the development of campaigns on small-scale fisheries and aquaculture. As described in the Center's Strategy Update, the Campaigns will provide a wider context and foster a broad range of institutional partnerships to address these issues and the Center will work with this to focus where our research niche is strongest. While this work is being led by the two Discipline Directors they are doing so in an explicitly interdisciplinary and cross regional way. The drafts of these strategies and Campaigns will be discussed by the Board of Trustees at its meeting in September 2006 and the Strategy for PESS will be developed in 2007. WorldFish is committed to using these Discipline Strategies to specify and pursue the key scientific issues and research objectives on which the Center will focus globally in the coming 5-10

years, and to use these to provide drive and focus to the Disciplines, stimulate collaboration with others in the scientific community, and demonstrate the comparative advantage and leadership of the Center.

4. The Panel recommends further studies on GIFT be undertaken by geneticists and nutritionists working together, using more controlled experimental conditions, and testing a large range of feeding levels.

WorldFish Response. We agree in principle that stronger collaboration between geneticists and nutritionists can be of value, and we are already exploring ways to do this through our work in Indonesia and Malaysia. The precise nature of the studies that should be done in order to provide practical value to the production systems that are of importance for poor farmers and therefore of highest concern to WorldFish will need to be carefully assessed as part of the future research strategy within the Aquaculture Discipline. WorldFish therefore commits to considering this recommendation when developing the aquaculture research strategy, and a detailed response will be provided through the strategy.

5. The Panel recommends that WorldFish:

- **continue to make a conscious effort to move away from downstream development activities and explore opportunities for development-related activities to be executed by local or bilateral entities, where available, while the Center continues to monitor and evaluate the activities/developments in order to analyze the impacts and also to identify constraints and bottlenecks which might require further research;**
- **undertake a scoping exercise to identify its partners' strengths and weaknesses in order to better target capacity building, especially of NGOs, to advance the development spectrum of its work; and,**
- **synthesize and package existing information, including frameworks, manuals, protocols and guidelines to ensure greater dissemination and use of its products.**

WorldFish Response. AGREED. We note that the Panel has recognized the strength of WorldFish partnerships with NARS and NGOs and the role these have played in the Center's ability to achieve impact through our research. The lessons from this have been reflected in the Center's 2005 Strategy Update which specifically focuses the Center's efforts upstream from direct development activities. As we move forward with the Strategy, and with regional portfolios in particular, attention is being given to strengthening these partnerships. This already involves an assessment of our partners' strengths and weaknesses as part of our project development work in many cases, but this will be extended with due account being paid to local sensitivities where necessary.

We view the synthesis and packaging of information for use through these partnerships as being especially important for the scaling out of the Center's impacts, and will therefore give increased attention to doing so. In this regard we note that the Panel found that material that the Center currently produces for this purpose is "widely used and applauded by a wide range of NARS and NGOs", and believe that this needs to be increased. While there is a clear tension between producing these products while also producing papers for refereed journals we believe that the measures currently being taken to improve the efficiency of our science publication, as well as steady growth in staff capacity, can simultaneously increase the output of both scientific papers and these materials for a wider audience of practitioners. In particular, tight management of science publication targets through annual performance plans of individual scientists in the NRM Discipline has already led to a significant increase in articles accepted for publication in refereed journals in 2006, and we foresee similar progress in the Aquaculture and PESS Disciplines as the same management approach is applied there. Similarly greater focus on the identification of stakeholders' publication needs as a part of tighter project design and management is leading to more targeted publication, as was for example seen by the panel during its visit to Cambodia.

To conclude the Center is committed to focusing on those areas of the research-development continuum that lie upstream from our NARS and NGO partners, to assess the strengths and weaknesses of partners in doing so, and to placing increased emphasis on synthesis and packaging of materials so that they can be used by partners in pursuing their role.

6. The Panel recommends that WorldFish clearly define its continuing involvement and role in the database [FishBase], including specifying how the various demands on staff will be met.

WorldFish Response. We believe that the Center has already defined its continuing role in FishBase. The WorldFish Center is one of six primary founders of the FishBase Consortium. Our participation is governed by a Memorandum of Understanding, signed by WorldFish and the other members. The MoU specifies that each member commits itself on a long-term basis to ensure development for the FishBase project. The members must provide human resources and financial support, both from the institution's core budget and through funded projects. WorldFish is committed to continue its full participation in the consortium because it is consistent with our mission and Strategy Update.

Within the Consortium WorldFish has a clearly defined responsibility to encode data and maintain the IT team, and develop new tools and areas in FishBase for the Conservation of Aquatic Biodiversity in ACP and Asian countries. The team (of 12 biologists and 3 IT staff) and operating costs are funded largely through the EU funding for food security provided through the EU contribution to the CGIAR.

7. The Panel recommends the Centre expand its modeling work on the supply and demand of fisheries and aquaculture and undertake additional ex-post impact assessment in aquaculture, paying particularly attention in both cases to technological environmental impacts and non-negligible dynamic (inter-temporal) effects of fisheries and aquaculture activities.

WorldFish Response. AGREED. The Center believes that our research on fish demand and supply has been highly effective in guiding policy and future research on fisheries and aquaculture and we are committed to building on this at global, regional and national level where appropriate. In addition we have welcomed the profile that the Science Council has given in 2005 to the ex-post impact assessments of our aquaculture research and are committed to increasing our work in this area. In doing so we will address the environmental impacts and interaction between fisheries and aquaculture where the data and funding are available.

8. The Panel recommends that future efforts be made in defining on a pragmatic and objective basis, the acceptable dissemination area of an improved strain, and the realistic monitoring that should be implemented in relation to this dissemination.

WorldFish Response. AGREED. The Center's work on the development of GIFT tilapia has been recognized internationally as a significant contribution to food security and poverty alleviation in Asia. However we believe that in order for the full benefit of this technology to be shared with other regions and applied to other species, much greater investment is required. The Center's Strategy Update accordingly highlights this as one area where we will increase our investment. Reflecting this strategic priority the Center is committed to expanding our work on the development of improved breeds of tilapias, Carps, and African catfish and, in doing so, to developing improved tools for assessing both economic utility and environmental risk of introducing specific strains. As part of this process the Center is developing a policy for use of the GIFT strain of tilapia, and developing risk assessment methods. One research project to pursue this has already been developed and others will follow.

9. The Panel recommends that the Centre take action on the following [for PESS]:

- **secure a Discipline Director as soon as possible;**
- **conduct a strategic process of research planning and prioritisation that enables the discipline to more precisely identify its research domain and a selected set of issues to produce significant IPGs; and,**
- **develop and apply a balanced growth policy for qualified scientific staff according to research priorities.**

WorldFish Response. AGREED. The Center is committed to strengthening the PESS Discipline and to moving rapidly to secure a Director. In view of the key leadership role required of this position the Center is equally committed to ensuring that a leading scientist with the required combination of managerial skills is appointed. While the position as advertised internationally in 2005 and candidates were interviewed, a suitably qualified candidate was not secured. We are however confident that this will happen in 2006, just as such candidates have now been recruited for the other two Disciplines (NRM and Aquaculture). When in

post the DD will have explicit responsibility for leading a strategic research planning process and for developing the staff capacity to pursue the discipline strategy that will emerge from this. We are committed to moving ahead with this as rapidly as possible.

10. The Panel recommends that WorldFish explore opportunities [in sub-Saharan Africa] for collaboration with other CG Centers, in particular IITA, WARDA, IRRI, CIFOR, IWMI, IFPRI and ICRAF, possibly within the context of task forces, to identify gaps in the application of IAA technology and methodology or for activities related to fisheries governance.

WorldFish Response. AGREED. The Center is already collaborating with IWMI, ILRI and ICRAF in sub-Saharan Africa (and with IWMI and IRRI in Asia) and we are committed to increasing this partnership with CGIAR Centers wherever this adds value to the work of both Centers. For example WorldFish and IWMI are collaborating on water management aspects of agriculture in southern Africa.

11. The panel recommends the Centre give high priority to:

- **recruitment of senior scientists with a proven track record or the involvement of such scientists in Centre projects through various forms of partnership and adjunct arrangements, and**
- **recruitment of a cadre of younger, recent PhD graduates, particularly in view of present and past difficulties in attracting more senior scientists.**

WorldFish Response. AGREED. As discussed under Recommendation 2 the Board of Trustees and Management are committed to strengthening the scientific capacity of the Center, including by drawing on the Center's reserves. This is being pursued actively to implement the Center's Strategy and to support development of the Disciplines and regional Portfolios under this. It is important to emphasize however that these increases in staffing need to be financially sustainable and considerable effort is being invested in developing staff capacity in a staged manner in order to ensure such sustainability.

12. The Panel recommends that WorldFish:

- **elaborate a Partnership Strategy focusing on, among others, the modus operandi for establishing strategic partnerships and alliances that would add significant value to the current research activities undertaken by the Center;**
- **explicitly define the roles and responsibilities of the Center relative to its partners in all major projects;**
- **determine its positioning on the research-to-development continuum, within the framework of an impact pathway analysis, for all major projects; and**
- **elaborate a human capacity building policy for its staff and its partners taking into account, as appropriate, the suggestions that have been provided.**

WorldFish Response. AGREED. As noted under Recommendation 5 we believe that the Center's partnerships with NARS and NGOs has been one of our strengths in recent years and this has been recognized widely, including by the CGIAR partnership award in 2004. As discussed with the Panel we are therefore committed to strengthening and expanding our partnerships in order to further increase our impact. We believe that a formal Partnership Strategy would assist by providing clear guidance to staff in pursuing this work and we will develop such a strategy. In doing so the elements recommended by the Panel will be addressed including clarifying the position of the Center and partners on the R&D continuum, and building capacity of staff and partners as required. We note also that WorldFish uses the Value Chain diagram as a device to guide discussion and thinking about these issues. This heuristic device should not be interpreted literally as a linear chain of events or skills from the creation of knowledge to improved lives. The stages 'along this chain' can be viewed as encompassing a bundle of attributes that differentiate sets of skills. We have used this device, along with an analysis of our strengths and weaknesses to work out how we might best place ourselves in partnership with others to achieve our mission. From this analysis we believe our comparative advantage lies at neither end of the spectrum, but in a balance in the middle.

13. The Panel recommends that the Centre's Board and Board Committees be restructured as follows:

- **reduce the Board size to not more than nine Trustees, including the ex officio Director General, Host Country representatives and the FAO nominee;**

- **modify Board Committee Structure to retain the Audit Committee, the Nominating Committee, and the Executive Committee, and eliminate the Programme Committee;**
- **include in the Centre's Annual Reports a Report of the Trustees, discussed and approved by, and signed on behalf of, the Board, and Audited Financials, duly certified by the Director General and the Chief Financial Officer, along with the Independent Auditors' Report;**
- **constitute a Science Advisory Committee of an appropriate number of members with suitable qualifications and experience/expertise, with a member of the Board as the Committee Chair. The Committee will report to the Board, and the Committee Chair (or any other member other than the Director General) should brief the Board at every meeting on its deliberations and advice; and,**
- **plan for CCERs on a three-year rolling time frame, to be updated each year, to obtain the best panelists with adequate advance notice, and spreading the workload evenly over the period. The CCER Panel Chairs should be requested to make the presentations to the Board on their Reports and Recommendations.**

WorldFish Response. The Center initiated a process of Board reform in September 2005 and we are pleased that the Panel Recommendations reflect the direction that is being taken. Specifically at its 29th meeting (5-9 March 2006) the BoT agreed to:

- reduce the Board size to eight Trustees, including the Director General and Host Country representatives;
- modify the Board Committee structure to retain the Audit Committee, replace the Nominating Committee with a Governance Committee, and eliminate the Programme Committee;
- pursue establishment of a Science Advisory Committee, with the Terms of Reference and operating procedures for this Committee to be reviewed at the 30th meeting of the Board of Trustees in September 2006.

We also agree that the Center should produce an Annual Report of the Trustees that is discussed, approved and signed on behalf of the Board, as well as Audited accounts.

As noted under Recommendation 1, the BoT has requested management to plan for CCERs on a 3-year rolling time frame and this plan will be considered by the BoT at its meeting in September 2006.

- 14. The Panel recommends that the Centre continue to accord this matter [maintaining reserves at prudent and yet not unduly excessive levels] very high priority and importance so that necessary and appropriate allocations are expeditiously approved and utilized.**

WorldFish Response. AGREED. WFC has developed a plan to draw on the Center's reserves to allow investment in science development. The Investment Plan for 2006 of USD1.2m provides for additional scientists and support costs in several regions for project development, implementation and delivery that lay a solid foundation for long term growth in our science, and funding base for this, consistent with the Center's updated strategy. The Center's Board and Management are committed to giving this matter very high priority on an on-going basis.

- 15. The Panel recommends that the Centre should revisit and comprehensively review this recovery methodology [rental charges as a component of overhead] in all its aspects, seek directions from the Audit Committee and Board urgently, and adopt an appropriate policy that would be consistent with the its Constitution mandating it as not-for-profit organization, and in full compliance with the Host Country and Land Lease Agreements with the Malaysian Government, and transparent disclosure to, and concurrence of, the projects where such recoveries are proposed to be applied.**

WorldFish Response. Agreed. The Center will conduct a comprehensive review of its overhead recovery concept and methodology which address these important issues. This review and a proposed policy will be presented to the Center's Audit Committee and the Board at its next meeting.

Science Council of the CGIAR

Commentary on the Third EP MR of the WorldFish Center

April 24th, 2006

The Report of the Third EP MR of WorldFish was discussed at the Fifth Meeting of the SC (April 10-12, 2006) in the presence of Panel Chair, Dr. Benedict Satia, the Director General of WorldFish, Dr. Stephen Hall (through video-conference) and the Center's Deputy Director General for Research, Patrick Dugan. The SC thanks Dr. Satia and his team for a thorough and comprehensive review of the Center. The SC endorses all 15 Panel recommendations and notes, for the most part, that the Center Board and Management have as well. The SC found many other valuable suggestions throughout the body of the text and encourages the Center to consider all of these seriously. WorldFish moved from its previous location in the Philippines to its current location in Penang, Malaysia in 2000. The Panel finds the Center still in a transitional phase, and accordingly makes a number of key recommendations aimed at completing this transition in the near future. Overall, the SC was pleased by the Panel's assurance that donors' funds had been well invested and that the future for the Center was bright, though challenging.

The Panel identified a number of major achievements of the Center since the last Review. These include the worldwide successful transfer of the GIFT, the strengthening and expansion of INGA, the development and application of methodologies and technologies for integrated aquaculture-agriculture (IAA) and rice field based aquaculture, the production of *Bayfish* and *TrawlBase* databases and the upgrading and maintenance of other key databases such as *Fishbase* and *Reefbase*, the production of global and regional models on fisheries and aquaculture supply and demand ("Fish to 2020" co-authored with IFPRI), and the development of methodologies and guidelines on fisheries co-management. The Panel also noted positively the new strategic alliance with IWMI to share Corporate Services. Major aspects of the Center's performance that attracted the Panel's concerns involved its priorities, its science quality, its regional reach, and its focus on SSA.

Priorities and Strategy

The Panel found that the Center had not yet clearly defined its research priorities (Recommendation 3) and that its strategy does not articulate the major specific objectives to be attained over a given time period. Given the vast area of research that conceivably falls under aquaculture and fisheries research and development, as defined in Chapter 1 of the report, the SC concurs with the Panel about the need for the Center to identify a smaller set of science based priorities on which it keeps a tight focus and for which the Center will be well recognised by its science peers. The Panel also found that science quality appeared mediocre when judged by publications in peer reviewed journals. The two issues, priority definition and

science quality, are by no means unrelated. It is clear that WorldFish Management is aware of and is addressing this issue with new research strategies being developed for the September 2006 Board meeting. While emphasizing he did not wish to in any way to pre-determine the strategies to be developed by the Center's Discipline Directors, the Director General identified a number of possible priority areas during his video-conference at the SC5 meeting. The SC reiterates that it is vital that WorldFish articulate soon its research niche capitalising on its comparative advantage. Partnerships with ARIs, where WorldFish is seen as the preferred research partner, will clearly be a key route to enhancing the outputs and impact of the Center, as will be filling key vacancies left by high performing scientists.

The SC is concerned that a third element -- the large numbers of regions in the region x discipline matrix may also be compromising scientific focus. WorldFish is, therefore, encouraged, like other Centers, to think carefully about the optimal number of regional offices and the core scientific staff needed in each in the context of focusing on a clear mandate for generating good quality science capable of generating mission-relevant IPGs. The SC highlights that the changing demography of the Center's staff has important implications for research management, in particular, stressing the need for mentoring of young scientists to help them achieve the appropriate balance of time between research and knowledge transfer.

The SC was expecting to see further elaboration in the Panel's Report about the future involvement of WorldFish in the conservation of genetic resources, in line with the new CGIAR Priority 1D. SC discussion did not determine whether a modest entry into fish genetic resources research was among the priority foci that WorldFish would embrace, but as the Center is being encouraged to focus on a fewer number of priority areas and this is currently not on their agenda, it may not get the attention the SC believes it warrants.

Science Quality and Relevance

The Panel stopped short of making a recommendation about the Center's shortfall in publication output as they were satisfied that Management had satisfactorily addressed this problem through the setting of Key Performance Goals and the annual appraisal system. Top quality papers are necessary to attract the top-flight collaborators from leading ARIs that are essential to achieving WorldFish's goals. In addition, and perhaps more critically important, setting individual performance targets should be complemented by a sharpening of the scientific focus. Potential journals for publication should also be discussed at the time of experimental design. The SC does, however, agree that WorldFish scientists also need to spend some time publishing research that can be applied by their primary NARS partners.

The Panel also urged WorldFish to continue to move away from pure development projects (Recommendation 5). The SC agrees with this recommendation and is reassured by the Center's response concerning the strong complementary linkages with NARS and NGOs. It is also pleased with WorldFish's use of the 'research-for-development value chain' to identify the place on the chain whereby research could

achieve the greatest impact, but specifying where on the chain the Center should position itself for achieving its major objectives needs fuller articulation.

The SC notes the Panel drew extensively on the five CCERs conducted since the last review and therefore strongly supports the recommendation to institute rolling CCERs for each of the programs (Recommendation 13, bullet 5).

Focus on SSA

The Panel raised the concern (Recommendation 10) about the lack of critical mass and activity in SSA (compounded by the large number of regional sites discussed above) and as a consequence the probable lack of impact in the future. This was an issue raised prominently by the 2nd EPMR team and the SC is also concerned, therefore, to note again that the 3rd EPMR Panel observed that 'the accomplishments ... in no way correspond to the acclaimed importance that the Center attaches to SSA'. The SC understands that the demands for Africa are immense and that impact in Africa is difficult to achieve making the earlier observation on focus and fewer regional centers even more critical for the Center to address. The SC received assurances that the Center is indeed progressively increasing its resource commitment in the Region. The SC cautions that with a small unrestricted budget this alone cannot address the concern of overstretching with too few scientists in too many regions to conduct mission based IPG research that will make a difference in Africa. The Center is encouraged to address the issues raised earlier to maintain focus.

Governance and Management

Other issues raised by the Panel included the new matrix management system, restructuring of the Center Board and the inter-Center linkages. While understanding WorldFish's need for having separate disciplinary and regional foci, the SC nevertheless shares the Panel's concern about potentially high transaction costs and staff acceptability of the matrix (Recommendation 1). The SC was reassured by the monitoring process already in place at WorldFish. However, the SC notes that regional matrix system was common to several Centers reviewed in 2006 and in all the centers concerns were raised about the potential loss of focus on IPG research and on the loss in integration across disciplines (which is the main source of high quality, land mark journal publications) inherent in an over-extended regional matrix system. It is important that these potential high transactions costs do not overwhelm the task of integration at the discipline levels. For example, the Panel has highlighted the need of developing a strategic research agenda from the merger of genetic resources and NRM research and to guard against a mere co-habitation of these in the new management system. The SC would encourage the Center to critically examine the implementation of its own matrix structure earlier rather than later (Recommendation 1).

Board structure and the establishment of a Scientific Advisory Committee was an issue the Panel addressed at some length (Recommendation 13). The SC was pleased to note that WorldFish had already put the required changes in place.

The SC joins the Panel in commending the proactive actions taken by WorldFish and IWMI to share Corporate Services. SC also noted the ongoing discussions between the scientists and the Boards of the two Centers and encourages further interactions that enhance the effectiveness and efficiencies of the Centers.

The SC looks forward to seeing some first responses to the Panel's observations in the 2007-2009 MTP, particularly those related to key scientific research focus, fewer regional nodes, and the Center's plans to enhance its presence and improve impact in SSA through appropriate interactions with other CGIAR Centers working in the region.

CGIAR Secretariat's Comments on the Governance and Management Aspects of the Report of the Third EP MR of the WorldFish Center

The CGIAR Secretariat expresses its appreciation to the EP MR Panel for a comprehensive and discerning review report, particularly on governance and management operations of the WorldFish Center.

The review gave a positive assessment of the overall performance of the Center over the period in review and also of the direction in which it is heading as a research institution in the CGIAR System. The Review Panel makes one recommendation with five components on governance and two recommendations on management. The CGIAR Secretariat supports all three recommendations and also finds the 20 suggestions on governance and management meritorious and deserving favorable consideration by the Center. We are pleased to note that WorldFish has agreed to all recommendations.

We are highlighting below a number of points related to the review findings and recommendations.

Board Issues

We very much welcome the Panel's recommendation on Board and Board Committee restructuring which is aimed at improving the overall effectiveness and efficiency of the WorldFish Board's functioning. We are pleased to note that there was substantial congruence of ideas about Board restructuring between the Panel and the WorldFish Board, and that the latter has recently made the decision to initiate the implementation of a number of the proposed changes. The creation of a governance committee, replacing the nomination committee of the Board, is not part of the Panel's recommendation. No other CGIAR Center has a governance committee in the Board, hence, it is a ground-breaking initiative on the part of the WorldFish Board. Its future impact on the overall Board functioning would be of particular interest to us.

We would like also to join the Panel in complimenting the Board for initiating a facilitated session of evaluation and deciding to develop a Board Competency Profile. This could very well qualify as one of the best practices that could be shared with other Centers.

Board costs were raised as an issue by the Panel, but no specific recommendation or suggestion was made. There is no guideline (except perhaps the average for the System) that one can refer to in assessing whether or not Center Board costs are reasonable. The size of the Center operation is only one of several criteria that may be considered. The increase in cost is justifiable if it translates to increased engagement on the part of the Board members and overall improvement in Center governance.

We note with concern the Panel's observation that some Trustees did not actively participate in the proceedings of the Board and Committee meetings. This is of special

concern especially in view of another observation by the Panel that second-term extensions are given to most Trustees, instead of being based on an evaluation of the trustees' performance.

Human Resources Management Issues

The Panel undertook a thorough review of two key areas under management: 1) human resources, and 2) finance, accounts, and audits. We agree with the Panel that human resources are the "most precious assets" of a research organization like WorldFish. We agree with the Panel on the eight suggestions that it makes on various aspects of human resources management. However, we would like to highlight the Panel's findings on the rate of staff attrition. We find the reported staff attrition rate in WorldFish too high (about 20% in 2005) and far exceeds the System's average. The high rate runs across all functions (units), and the one in Finance is particularly high at 30%. In our view, this poses a risk (deficient internal control environment). The problem requires urgent attention and is clearly important to warrant a recommendation from the Panel for immediate action. Appropriate strategies should be drawn up by the Center to address the problem.

Finance and Related Issues

Although the level of reserves may reflect a combination of factors such as financial circumstances and risk tolerance, a level considered excessive could also convey the wrong message to CGIAR Members, for example, that the Center's financial resources originally intended for supporting priority research are not being effectively managed. At ExCo8, the issue of excessive reserves was formally taken up for the first time, and the CGIAR Chairman was requested to raise it with the concerned Centers through the Board Chair. We are pleased to know that WorldFish has drawn up and begun to implement a plan for utilization of excess reserves as a component of the Center's Investment Plan for 2006. The Finance Peer Review group recently reviewed this plan and will report to ExCo10 that WorldFish's reserves are moving in the recommended direction, based on the Center's 2005 financial outcome.

The Panel recommends that the Center review its indirect cost recovery methodology and introduce necessary changes to bring it in compliance with the CGIAR's recommended guidelines as contained in CGIAR Financial Guidelines Series No. 5 (CGIAR Indirect Cost Allocation Guidelines).

The Panel also looked at WorldFish-GIFT Foundation International (GFI)-GenoMar relationships and partnership arrangements primarily as an issue relating to the management of the Center's IP. We think that an equally critical issue is the potential conflict-of-interest brought about by the WorldFish DG's chairmanship of the Board of GFI, a not-for-profit organization aimed at continuing research on the genetically-improved farmed tilapia strain originally developed by WorldFish and its partner institutions. We feel that the Panel did not devote sufficient attention to this serious

governance issue in its report. However, we are pleased to know that the current WorldFish DG has recently stepped down from the chairmanship of GFI.

Recommendation

The CGIAR Secretariat recommends endorsement by ExCo of the WorldFish EPMR recommendations and commends the Center for already taking appropriate actions to implement several of the recommendations.