



5th Meeting of the Independent Science Partnership Council

26-29 March 2012
ICRISAT-ICAR at the NASC Complex
New Delhi, INDIA

END OF MEETING REPORT *(ISPC Secretariat, May 2012)*

Agenda Item 1. Opening of the ISPC Meeting

Ken Cassman, ISPC Chair, welcomed participants and opened the meeting.

Dr Ayyappan, Director General of ICAR welcomed the ISPC, Center Directors and Center staff and participants to the meeting. He noted that ICAR had a history of extensive collaboration with CGIAR; it stayed closely in touch with the reform through its participation in the Fund Council and had a long standing partnership with Centers, particularly with ICRISAT and ICARDA on dryland issues and CIMMYT on cereals. He was glad that the ISPC had chosen to come to New Delhi and welcomed the opportunity that ICAR senior staff and the ISPC would have for a discussion around ICAR's new strategy following on from the ISPC Meeting. This would represent the 12th 5-year plan for ICAR and he welcomed input.

Dr Willie Dar, Director General of ICRISAT, welcomed the ISPC and participants on behalf of ICRISAT who were co-hosting the meeting. ICRISAT is designing research which seeks to help the smallholder farmer. He hoped that the new CGIAR would increase efficiencies and be open to the inputs of new partners. They were hoping for clear lines of accountability between research and funders. He hoped that the ISPC would help strengthen the reform process. He recognised that there was still a job to do in the development of the CRPs and looked forward to working with the ISPC and that the Fund Council had recognised the need for this interaction.

The Chair noted that the ISPC was pleased to respond to the invitations of both institutes and was looking forward both to the meeting and to the interactions planned with both ICAR and ICRISAT during the next few days.

Agenda Item 2. CGIAR progress update

The ISPC Chair noted that the ISPC saw itself as playing on the team that was transforming the CGIAR. Its mandated roles in ex ante evaluation of the new programs and quantifying impact were clear. The impact assessment was conducted through the ISPC's standing panel on impact assessment, SPIA and the SPIA Chair is a valued ex officio member of the Council where learning

of all aspects of the Council's work can be interwoven for maximum effect. The Council has used the Science Forum as a vehicle to help mobilize science and partnerships. The outcomes of the recent Forum had already been well received and had been influential. In the workplan for 2012 the Council has taken the opportunity to lay out ways in which it can assist the CGIAR in the area of strategy and trends and to identify areas where the independent advice or brokerage around scientific issues would be useful. The trend work was expected to assist the development of the new SRF and the ISPC Chair reiterated that the Council was looking for a strong dialogue with the Centers through the Consortium. There remain some grey areas, since all of the current CRPs have been reviewed but proposals remain at a high level and their science is often not apparent. The Fund Council has licensed interaction between the ISPC and proponents of the final proposals seeking FC endorsement, and the systems programs have some way to go in conceptualizing how best they will work.

Consortium: Stefania Grando, representing the Consortium Office gave apologies for absence from Ganesan Balachander who would join the meeting later. Four major areas occupying the Consortium currently were the SRF action plan, harmonization of the CRP portfolio, monitoring of CRPs and Gender. The SRF was endorsed in 2011 but subject to the development of an Action Plan for the inclusion of identified gaps and its expected future revision. The Funder's Forum expects to review the Action Plan before GCARD 2 at the end of October 2012. Thus the Consortium hopes to have a first draft Action Plan in June and to begin regional consultations in July. It will be shared iteratively with Centers and CRP leadership. She welcomed ISPC input into the methods and process of prioritization which the Consortium would need by June to fit into the described schedule. ISPC input into the selection of appropriate metrics to measure progress towards the SLOs would also be required. A global foresight hub had been created by GFAR and the Consortium Office intends to use this as a way of keeping in touch with different actors on a range of foresight questions.

The Consortium's approach to harmonization of the CRP portfolio will be to take a set of elements at a time, such as the status of CRPs, structure and nomenclature, research priority setting within CRPs, research synergies and cost effectiveness, common indicators (and here both common metrics and "best fit" indicators by CRP were anticipated, perhaps distinguishing between the needs of system-level and group-level i.e. groups of CRP, indicators), common research sites, research data management, genetic resources and how the various elements should be handled, monitoring and reporting, interim annual reporting templates, and mainstreaming gender in research. All agreed that this was a very full plate.

She announced that the new Consortium CEO Dr Frank Rijsberman will start in Montpellier on the 28th of May 2012

The ISPC Chair said that he and the Secretariat looked forward to interacting with the new CEO and more immediately to discussing with the Consortium where ISPC studies, particularly the cross CRP review, could be designed for maximum assistance to Consortium efforts.

Fund Office: Jonathan Wadsworth, Executive Secretary Fund Office provided an update on CGIAR Fund and Office activities by telephone. The CGIAR Fund had been active in 2011 with a total of USD378.8 received (as of the end of December) and USD 251.3 in disbursements from all Windows of the Fund. Five CRPs received funding with the largest amounts being provided to CCAFS and GRiSP, the first CRPs to be endorsed. Donors still could be classified into three types depending upon the window of the fund that they favour. He noted that there were still a substantial number of donors who provided predominately window 3 funding. While this was understandable given individual donor's circumstances, the operation of the Fund would be assisted by having a

large proportion of funds in Windows 1 and 2 and addressing the issue of legacy projects which did not provide the standard 2% contribution to system costs. Current projections suggested that slightly in excess of 400 million would pass through the fund in 2012. This would be sufficient to meet the demands on the fund by CRPs as, under recent arrangements with the Consortium projecting the need for the increased number of CRPs coming “on-line”, approximately 100 million was required per quarter to support CRP activities from Fund sources. The 2% levy in available funds in 2011 had been sufficient to support system office costs (Fund Office, Consortium, ISPC and Trustee in 2011). The total budget request had been USD14.3 million of which only 8.65 million was required from the Fund because of other funding sources for the Consortium and the ISPC (i.e. the FAO contribution in the case of the ISPC). In 2012, Fund Office and ISPC budgets are relatively stable, but the Consortium budget would be higher with small alternative funding sources for its support. Also GCARD would be held in late 2013 and the Independent Evaluation Arrangement will become active. Of a total budget of USD16.6 million for all these entities, 14.6 million would be requested from the 2% levy for system costs (implying a total system funding of USD 720 million).

He noted that 2012 is the final year of the inaugural Fund Council and that Council make up and mechanisms will be reviewed. He further gave indications of the range of support activities that the Fund Office was engaged with in relation to implementation of Fund Council business; including the CGIAR policy for Independent External Evaluation, support to establishment of Fund Use Agreements, the CGIAR principles on Intellectual Assets and the continuing interactions with donor communities *inter alia*.

In discussion it was noted that there was a substantial improvement in the Fund and its outlook. It is appropriate to have high ambitions (both for Fund size and research) but the system had to ensure that it had a genuine absorptive capacity for the large sums that were being projected. However, practically, there were still more than 3000 projects (of all sizes) which were being funded bilaterally. The issue of “parallel” and perhaps “regional” work was discussed for work in areas not covered by current CRPs and there are still diverse opinions on how future Center budgets may be made up. Center directors noted that whatever is desirable for all parties in the future, *currently* Window 3 offers stability to Centers at a time of transition. Donors themselves have different channels for funds (“Fund funds” and competitive grants, for instance) and it was still appropriate to balance these. Window 1 should not be seen as a contingency fund but as the safeguard for the priority work of the system. The meeting noted that there was a need to continue to work on Center trust and incentives to move the current bilateral money through the Fund.

The ISPC Chair apologised for the technical problems that had affected the connection but that he was pleased the session could be concluded with an update on the Fund benefitting all parties.

Agenda Item 2 (ii). Update on the CRPs

ISPC Chair, Ken Cassman introduced the item by reporting briefly from the recent Fund Council meeting. He conveyed the feeling of the donors that progress had been made in getting the CRPs through approval although some CRPs have been more difficult than others. *David Hoisington*, DDG-Research of ICRISAT, presented an update on the two ICRISAT-led CRPs (CRP3.5 on Grain legumes, and CRP3.6 on Dryland cereals) and plans for their further development in light of ISPC and Fund Council comments. The proponents are working towards a new submission by the end of June. Hoisington discussed the main areas where improvement is needed. The proponents can work further on analysis of some of the demand and production trends and past successes and failures thereby deriving focused product lines. However, often it is a case of relying on “BAD” (best available data). Data for legumes in particular is often lacking or questionable but for some other crops there are good data. Development and assembly of good data will be an objective for future

priority setting. Data on poverty (<USD2 per day) and area (1 million ha as a threshold) form a primary matrix to assist crop prioritization. Information on smallholder numbers and other research providers will be needed as further criteria for priority setting. The specific constraints that can be addressed through research need to be identified. Crop and region-specific product lines will be fully justified and discussed with partners in a workshop in April/May to identify overlaps, complementarity and contribution from partners. There are other major initiatives in these areas of research (e.g. by USAID, AGRA, BMGF) with whom that the proponents should consider engaging.

Steve Hall, DG of WorldFish, gave an update on CRP1.3 on Aquatic agriculture systems. He related progress the CRP had made on governance, specifying geography, major issues, gender strategy, and issues related to impact assessment and learning. An independent Program Oversight Panel with considerable decision-making power has been established, chaired by a high level expert. The Program Leadership team is also in place with WorldFish DDG-R as leader. A carefully staged process is planned to roll out program operations initially in a few countries and selected locations (hubs) within a country. The strategy for research in development is based on embedding research in communities. Key partners will be involved in community empowerment. The program will build on the ARD and participatory research tradition. The gender strategy will be mainstreamed throughout the agenda. Monitoring and impact assessment will need to be central to the program, which can benefit from involvement of the NRM impact team. A major issue will be how to link the community level with the landscape level for impacts at scale. A learning alliance is formed with three teams: Conceptualising approaches; Building tools and methods; and Learning about development processes. Going outside the CGIAR for partners in program implementation has been judged as being very valuable.

Tom Randolph, the Director of the CRP Meat, milk and fish (3.7) reported that the CRP was a partnership of 4 CGIAR Centers (WorldFish, CIAT, ICARDA, led by ILRI) and had adopted a value chain framework as its main impact pathway, proposing to focus the research efforts on 9 selected animal-source food value chains, generating solutions and evidence that will attract development investment to take the solutions to scale. The value chain level work is supported by cross-cutting platforms on technology generation and socio-economic issues. The target value chains include aquaculture in Egypt and Uganda, smallholder pig systems in Uganda and Vietnam, small ruminants in Ethiopia and Mali, and smallholder dairy in Tanzania, India, and Nicaragua.

The CRP was approved by the FC in July 2011, and the performance agreement signed in December 2011. The program officially started in January, 2012. For 2012 the program's CGIAR Fund portion of the budget is fully funded at \$10.3 million, but the Restricted Funding portion faces a gap of at least \$6.6 million of the total \$19.4 million projected in the proposal. The initial focus has been on translating the CRP proposal into an Operation Plan for 2012-2014. This process is also helping to consolidate leadership of the various CRP Components. The delay in developing the Operation Plan has not affected the continued implementation of pre-existing research aligned to the CRP, including those in many of the target value chains. In addition, major new projects have been initiated recently in the Egypt aquaculture, Tanzania dairy and Uganda pig value chains funded by donors keen to support the CRP.

The CRP has been devoting attention to specific issues raised during the proposal approval process and by the ILRI Board of Trustees. These include:

- Environmental considerations: An initial focus is to adapt the Life Cycle Analysis approach as part of our value chain assessment. ILRI and WorldFish are already in discussions with

relevant groups at FAO and Wageningen Agricultural University to develop this methodology.

- Poultry: The absence of poultry as a target value chain was challenged. It has been agreed that ILRI will develop a position paper on this subject this year.
- Human nutrition and consumption issues: The ILRI Board of Trustees recommends an explicit research component be developed within the CRP to address these issues. The CRP has committed to prepare a strategy on this subject this year.

The most obvious opportunities for synergies with other CRPs lie mainly with CRP2 on value chain assessment and development methodologies; the various CRP3s on breeding dual purpose food-feed crops; and CRP4 on food safety and zoonoses and on enhancing nutritional impacts. Activities funded by CRP4 have already been designed to provide the food safety and zoonoses outputs needed for the CRP3.7 target value chains. Randolph noted that these outputs would be reported under both CRPs and so highlight the avoided duplication and the gained synergy. Similar arrangements will be developed with the other CRPs in the near future.

Mahmoud Solh, DG of ICARDA, gave an update on implementation of the inception phase for CRP1.1. The activities involve: engagement of four international expert consultants for facilitate the inception phase; a three-day CRP framework development workshop and a pre-meeting for it; establishing an interim Steering Committee comprised of representatives of the four participating Centers for the duration of the inception phase; selection of a CRP Director to be finalised within a few weeks. During the inception phase, the CRP will proceed with work on production system selection and problem diagnosis on the ground; organization of inception workshops; and planning for full implementation. The ground work has already started, and the interdisciplinary research teams are in place. The regional inception workshops will take place in May-June after which the synthesis of the results will be prepared by September and a revised CRP1.1 proposal will be submitted to the Fund Council and the ISPC.

In the discussion, the following issues were raised:

- CRPs 3.5 and 3.6: Mapping poverty is a good start, but with the commodities in question there are important differences within regions and household data would strengthen the analysis.
- The role of legumes in enhancing soil health may be underestimated.
- CRP1.3: Emphasis on impact assessment is commendable for a program which is at the interface of research and development for incorporating lessons back to research.
- Engagement of more Centers in CRP1.3 is still lagging but maybe possible when theories of change are further developed.
- Impact assessment will be different when working on systems where there is no single best outcome (compared with commodity programs), but research products are options and opportunities. Forming a learning group is a very sensible way forward.
- SPIA will be happy to support building impact assessment approaches at the outset.
- Regarding the time frame for starting to see tangible and measurable impacts or even mid-point outcomes; the CRP foresees that following a scoping phase, development of theories of change, and validating the work and collaboration, the program will be in position to present the research agenda. The agenda depends in part on the results of the community engagement process. It is expected that the *ex ante* impact assessment will yield the target time frames.
- CRP3.7: The CRP will include both nutrition and health issues and food safety is part of the program. There are nutritional aspects in both fish and livestock value chains. Negative aspects of livestock are often emphasised in developed countries but the CRP will look at smart ways of enhancing nutritional security for the poor.

Agenda item 3. Strategy and trends: Finding convergence on views of the future ***The future of agriculture – the trajectory of change***

Ken Cassman opened the session by highlighting the critical role played by the ISPC in identifying emerging issues of importance to agriculture in developing countries that are likely to influence the CGIAR's agenda. The purpose of this session was to help crystallize the ISPC's workplan in this area by inviting speakers to address two important topics: the future of farm size and the changing nature of food systems in developing countries from a global and Indian perspective. Ultimately, this should be useful in underpinning strategy development by the CGIAR. The Chair introduced four speakers addressing aspects of these two subjects:

a. *Ashok Gulati*, Chairman of CACP spoke on *The Future of Indian Farming*. With respect to the outlook for Indian agriculture, i.e., whether India will be able to feed itself in the next 10-20 years, Gulati asserted that even in the face of shrinking per capita availability of land and water resources, their deteriorating quality, and increasing global climate change, India will succeed to feed itself, provided technological break-throughs in agriculture continue. He sees the private sector playing a critical role here, as in the impact achieved for Bt cotton and hybrid maize. As for the current food situation in India, the outlook is good: rising production of grains (250 mt in 2011-12), swelling stocks of wheat and rice (rising from 24mt to 72 mt since 2007) and a net agricultural exporter (especially of rice and maize, and importing edible oils and pulses). Growth rates in agriculture have fluctuated between 4.7% - 2.4% per annum since 1992.

Gulati described the challenge of the fragmenting farm sector; at the all-India level, average farm size holdings are falling (1.8 to 1.3 ha since 1980), but for some states there is a leveling off or even increase through consolidation (e.g., Punjab). In many other cases, informal clustering of small farm areas results in effective consolidation of farms (which does not show in statistics). Capital formation in agriculture is growing and playing a key role; with the private sector the main driver - the share of private sector in gross capital formation in agriculture has risen from 50 to 80% since 1980).

During the discussion, Gulati provided some clarification in relation to cereal area and yield growth in different regions of India (yield growth higher in Eastern India). It was noted by an ISPC member that most of the increase in grains is coming from rainfed areas and this raises a concern. Gulati agreed and explained that much of the yield growth derives from the higher rainfall areas of eastern India, which still have considerable potential. In response to a question about the continuing decreasing farm sizes (compared with the rest of Asia), he suggested that the picture is quite heterogeneous across India, and looks different if the informal leasing in and out is taken into consideration, especially for some states, e.g., Punjab, AP. On the question of whether India should simply accept its status as an importer of oil, Gulati argued that competitiveness changes over time and some areas of India (Godavari in AP) have clear potential for oil palm, but may need initial subsidy to make it competitive.

b. *Steve Wiggins*, Overseas Development Institute, UK, spoke on *Farm Size Dynamics*. Wiggins addressed three major topics in his presentation: How farm sizes are changing; why there are so many small farms; and the associated policy implications. Available data shows a mixed story for *changes in median farm sizes*. In some countries, particularly in Africa, but also for India and Pakistan, they are still getting smaller, while in others farm size appears to be stabilizing or even getting larger (Turkey, Indonesia, Thailand, Ethiopia, Malawi, Colombia, Peru). Though there is tremendous heterogeneity across farm sizes in Africa, very small farms dominate in most developing countries, e.g., 75% of the farmers in Kenya and Mozambique own less than 2 ha of land. In Ethiopia and Rwanda, 75% own less than 1 ha. As for the *reasons for so many small farms*,

Wiggins suggested two factors: (i) population grows and households retain land (partly due to failing land markets); and, (ii) value of production per hectare is higher amongst small farms (the inverse ratio of farm size and production per hectare). The reason most commonly put forward to explain this is that small farm households allocate more labour to their fields than large farmers, because, transactions costs of supervision of hired labour are greater on large farms; while land markets do not fully equalise returns per hectare since landowners are reluctant to rent or sell as much land as factor returns might indicate.

Wiggins suggested a strategy (for the CGIAR) to work with selected groups of small farms (not only for productivity but for helping some of them transition out of farming or into part-time farming), and adopting an inclusive approach. For this he proposed a typology based on asset endowment (high vs. low) and type of environment (favourable vs. unfavourable), and identified specific options for different types of rural households: i) “Step up” – intensify farming (through investment climate, roads, research and extension, finance) for the better off smallholders who have possibilities of full-time livelihoods in farming; ii) “Step out” – into the Rural Non-Farm Economy (RNFE) (by promoting education, skills, finance for those households that are unlikely to earn a decent living from farming alone); and iii) “Hang in” – protect and survive (requiring social protection, low labour/capital technology) for the chronically poor households that lack working members owing to old age, illness, disability or addiction.

There were a number of questions put forward by ISPC members and observers relating to the inverse ratio (small farms being more productive/higher value), in particular, whether any adjustment had been made for quality of land or agro-climatic zone, whether large farm consolidation is the best way to go or whether we can have small but efficient farms, whether in fact small farms are really more efficient (evidence from Rosenzweig and Foster in India show they are not as efficient) and the relationship between population growth and farm productivity? Wiggins noted that these are highly relevant but complex issues and all of these need to be looked at more systematically. Consolidation is probably occurring more rapidly in the relatively faster growing economies but this needs further study. It is not evident that we should be encouraging consolidation of farms, not in any normative way. That transition is taking place on its own: marginal farmers find themselves better off in the off-farm economy, allowing full-time farmers to expand. So the transition is occurring, but it should be gradual.

c. *Surabhi Mittal*, CIMMYT, spoke on *Food Demand and Supply Projections in India*. Projections of demand and supply of important food items can help policy makers take informed policy decisions relating to food security and food self sufficiency. Mittal and others have examined past trends in consumption and supply of food in India as a basis for model projections. The results of these several studies show wide variation between different models; projections depend on the data, elasticities, methodologies and assumptions. The main conclusions from estimating demand for/supply of food in India:

- As income increases, share of households expenses shift away from staple food to high value agricultural products.
- Rural households (HH) spend more on food than urban HH, but the preference structure of food consumption is identical.
- Various studies suggest only marginal deficit/ surplus for rice and wheat under scenarios of productivity growth and acreage response, as in the present situation.
- Various studies have highlighted the need for strengthening the efforts at increasing production potential through public investments in irrigation, infrastructure, research, precision use of inputs- water and nutrients.

In response to the observation that the impact of urbanization on food demand and food preferences appears to be small from these results, Mittal indicated that the averages may often conceal those effects and that the NSS data cannot capture everything. There were initially cultural preferences which maintained food preferences and only at greater levels of affluence did things change. Given the range of different demand estimates – which is a problem for policy makers – one ISPC member suggested ‘back-casting’ to validate model results, which apparently has been done in some cases, but the errors were large.

d. *Thomas Reardon*, Michigan State University spoke on *Urbanization and Transformation of Food Systems and Rural Economies*. Reardon discussed five key developments taking place in food systems in rural economies:

1. *Urbanization is a central force shaping the food market facing farmers.* Urban share of population moving beyond 50% in all developing regions; in Asia the urban share of the food economy is already ~ 75%. He suggested that the key question therefore was what happens in urban markets and in urban-rural supply chains is by far the most important market force affecting farmers.

2. *The Rural Non-Farm Economy (RNFE) is a major force affecting rural households.* 40-50% of rural household incomes in all developing regions are from RNFE income and this is very important to farm productivity investments (emerging evidence shows it to be more important than credit).

3. *Urban-rural links increasingly crucial to the farm economy.* Key points here: a) Urban and “**rur-urban**” markets condition the RNFE, which in turn conditions farm economy; b) Urban and rural markets increasingly affect the farm sector via rural-urban supply chains; c) Several forces (improvement of supply chain efficiency, market liberalization and improvement of transport infrastructure) “open” the rural economy to urban and non-farm sector change. These forces expose poor farmers to huge transformation in urban domestic economies, supply chains, and the RNF economy.

4. *Double-Revolution in food systems in developing countries.* (i) the “Modern Sector Revolution” driven by urbanization and consumption changes with food industry segments in symbiotic co-evolution (rapid rise of supermarkets, large-scale food processing and large logistics and distribution companies) and (ii) the “Quiet Revolution” in traditional food supply chains especially in the “midstream” of the supply chains. The latter has been overlooked but it is a powerful transformational force in, for example, a) processing segment (technological change and consolidation in rice milling in Bangladesh, China, India, Vietnam); b) cold store segment; (c) wholesale/logistics segment; (d) rapid technological change among farmers. Transformation is taking place at different rates depending on geography and socio-economics. There is also a marked rise in demand for food safety by domestic consumers.

5. *Opportunities and threats for rural households from the transformations.* Some clear opportunities are opening up: (i) Quality and product differentiation: grading, sorting, premium/incentive for quality and diversity of varieties; (ii) Market expansion for economies of scale in RNFE via linkages with developing rural-urban supply chains; (iii) Increased commercialization and incentives to invest in farm productivity (commercialized farmers significantly more likely to invest in soil conservation measures and productivity-enhancing inputs than subsistence and near subsistence farmers).

Reardon argued that the above trends suggest that: (i) the poverty and competitiveness debates need to be joined and, (ii) market development and farm productivity debates need to be linked. With respect to the former (poverty and competitiveness debate), an ISPC member noted that many poor live in poorly endowed regions (low rainfall, poor soils) and have limited scope for becoming competitive. Reardon agreed, noting that those households with the greatest need for diversification such as those in hill areas, or in desert margins, often have the least capacity to do so. In a question

about the immense transactions costs incurred by wholesalers when they go directly to farmers, Reardon explained that small farmers are organizing themselves together in groups for that purpose.

Agenda item 4. Strategy and trends: Setting priorities/ learning from others

Sirkka Immonen (ISPC Secretariat) gave a *Presentation of lessons learned from previous priority setting*, which emphasized that there have been a number of such exercises since the mid-1990s, and yet none has significantly influenced the development of the CGIAR's planning processes. The most important characteristics of further priority-setting efforts are that they should be credible, clear, and broadly acceptable to the main stakeholders within the CGIAR. There are a number of "givens" for the CGIAR that should be recognised at the outset as part of the *de facto* set up of the system and contributing to its comparative advantage – a set of long-term assets and research competences such as genebanks, long-term breeding lines etc. Immonen proposed therefore that the ISPC should focus on describing, based on the set of CRPs, a set of development outcomes from which there is a clear theory of change linking research activities to the system-level outcomes (SLOs), as input into the road map to a revised SRF.

Derek Byerlee (SPIA Chair and *ex-officio* member of the ISPC) provided a *Brief summary of history and current status of research prioritization framework for the SRF*. The two papers together provided an overview of past and on-going efforts regarding priority-setting within the CGIAR. Byerlee offered his perspectives from his involvement in the development of the first iteration of the SRF. The initial mandate came from what was the Alliance of CGIAR Centers, to engage in formal priority-setting. This was done using poverty maps and the analytical hierarchical process (AHP): a structured process of pair-wise comparisons for scoring against objectives. The Global Futures program, with the involvement of seven CGIAR Centers, is a collaborative effort on foresight that combines economic modelling using the IMPACT model with crop models, to generate biophysically and economically integrated scenario analyses. For the commodity-focussed programs i.e. CRPs 3.1 – 3.7, Byerlee suggests that there is significant potential for priority-setting within the Global Futures collaboration. For research areas that are more difficult to model *ex-ante* an approach based on AHP might be more appropriate. The worst kind of priority-setting is no priority-setting.

In discussion, Stefania Grando from the Consortium Office urged the ISPC to provide a broad range of scientific inputs in time to fit in with the Consortium's action plan towards a new Strategy and Results Framework. The Consortium has been requested to submit this action plan for approval at the Funders Forum at GCARD (late October 2012). Working back from this deadline, the document has to be submitted at the beginning of October and the Consortium wants to involve many partners through cycles of consultation with regional / global fora, in conjunction with GFAR. To allow for this consultation to take place in July and August a road map document will need to be prepared by the end of July. Therefore, by the beginning of June, the Consortium will need input from the ISPC.

Cassman clarified that, while the request is for the ISPC to provide input to priority-setting, a description of the development outcomes bridging the CRPs to the SLOs would be part of the ISPC's contribution. In addition, the ISPC can offer clear guidance about prioritisation within the CRPs, given the Council's position of having collectively reviewed all 15 proposals. However, Cassman noted that prioritisation across the whole system was challenging and the first opportunity may be to look at synergies and efficiencies. Immonen reinforced the importance of focusing on the "missing middle" of development outcomes linking the CRPS to the SLOs, and shared Cassman's concern about whole CGIAR system priority-setting, at least with single criteria.

In discussion it was noted that planning and priority-setting exercises are very costly and yet the CGIAR has been engaged in a seemingly continuous process of priority-setting over a number of years. How will the system get something acceptable at lowest possible cost? Byerlee suggested that it was necessary to start with the CRPs and gave GRiSP as a recent example. He expressed his view that the reason previous system-level efforts hadn't worked was because there wasn't any way of incentivising or enforcing it, but that it did work within Centers. Gathering the data from priority-setting within the CRPs (poverty numbers, constraint analysis, etc) is a necessary pre-requisite for strategic system-level priority-setting at a later date. Steve Hall said he was encouraged by the appetite for a unified vision, and urged the ISPC to maintain a watching brief rather than interfere too much with the work of the CRPs. The value from the ISPC will be in creating the links between the SLOs and the CRPs outputs.

It was explained that the Consortium Office is part of GFAR's global foresight hub, with the aim of drawing lessons from different groups working on foresight around the world. The Consortium could use this as a sounding board for different questions – for example regarding foresight methods etc. It doesn't mean that the Consortium are outsourcing foresight responsibilities to GFAR, nor does it mean that the Consortium is taking over from ISPC on foresight issues – this is a collaboration. Whilst observers urged the ISPC to look at agriculture in the big context, in the changing world, the Chair noted that providing inputs on the big picture issues might be beyond the ISPC in the timeframe for the roadmap. Byerlee agreed that there is a need to link the foresight and priority-setting activities as the world is changing so fast and we need a constant process of priority-setting. Questions were raised as to whether the cross-cutting issues such as gender and capacity development fitted in with priority-setting. Byerlee responded that this was for the Consortium to decide on. One possibility is that priority-setting itself becomes a cross-cutting platform. Ganesan Balachander from the Consortium Board cautioned that priority-setting within CRPs might need to wait for the next 3 years. Redundancies and overlaps within the portfolio are an important topic, as is the missing middle of development outcomes. The ISPC should provide a birds-eye view.

The process of moving on system-level priority-setting will be made more difficult if CRPs employ different metrics for measuring progress, and it was noted that the NRM stripe review offers insight into the range of possible metrics that might be needed for tracking progress. The Chair, in closing this session, highlighted that donors are unified in their commitment to the development of the SRF with quantifiable development outcomes.

Presentation of the outcomes of the ISPC study of NRM in the CGIAR

Jeffrey Sayer provided an update on progress with the NRM research Stripe Review. He reminded the meeting that the initiative started in December 2010 with aim to provide the Centers, the Consortium and the Donors with insights and considerations that might facilitate the design and implementation of future Natural Resources Management (NRM) programs. The aim for these programs is that they would produce international public goods and achieve impact at scale within the context of the CGIAR's vision to “reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international agricultural research, partnership and leadership”. Sayer presented the major outcomes of the Panel's deliberations and the draft final report “A way forward for NRM research in CGIAR”. The draft document was being proposed at this meeting for discussion and to promote feedback from the ISPC members and the other participants of the meeting, including Centers and CRP representatives, Consortium Office, Consortium Board and donors.

Out of the key messages presented in the report, Sayer highlighted three underpinning considerations, i) the foundational role of INRM in the CGIAR; ii) the increasingly blurred distinction between INRM and crop germplasm improvement (CGI); and iii) the paradox of NRM research impact, when effective natural resources management seems to be increasingly important to the attainment of the global goals for agriculture and development, yet the evidence for impact from NRM research at scale remains patchy. Certainly the CRPs are a major innovation to embrace NRM issues, but it still to be seen if the CGIAR and its partners will be able to effectively implement them. Main issues identified in the report span from the proposal for a new (GxExM)I paradigm, which goes beyond the classic “three pillars” of CGIAR, and encompasses genetics (G), environment (E), management (M) and “institutions” (I), used in the broadest sense of the word which includes policy research. To be successful, this new paradigm would require - among other things - improving monitoring, evaluation and impact assessment to value NRM research as well as investing in “strategic leadership”. At the same time, a long term engagement of the donors would be essential for the success of these new research programs. Sayer also presented a brief overview on the results of the bibliometric component of the NRM Stripe Review, reminding the meeting of the several challenges and caveats in the conduct of valid bibliometric surveys. He noted that CGIAR research is certainly widely cited, but that the citation record is still not as strong as desirable. It was also recommended that Centers and CRPs, where they do not do so already, could certainly use citation analysis as management tool.

In discussion, members appreciated the term sustainability science and “user inspired science”, as put forward by Sayer, since it gives the sense of demand-led science. The report and the initiative was welcomed by the representatives of the Consortium and of the Centers; WorldFish Director General, Stephen Hall, suggested that once completed, the report could be presented also during the meeting on Research and Development that WorldFish is organizing for January 2013 in Penang, Malaysia. In terms of how to improve the report, participants encouraged that attention be given to showing the “influence” (more than the impact) of the NRM research. They recommended also to state more clearly the final beneficiaries of the NRM research within CGIAR, the definition of “institutions” within the new paradigm proposed by the review, and the methodology used to assess that CGIAR has “done good” in terms of NRM research.

For the finalization of the efforts, it was agreed for members of the ISPC to send their comments and feedback on the draft report to the ISPC Secretariat by April 13, 2012.

Agenda item 5. Strategy and trends: Seeking efficiencies in the portfolio approach: Conservation agriculture

James Stevenson (ISPC Secretariat) gave an introduction to conservation agriculture, defined as a package of management practices: minimum tillage, maintenance of crop residue in the soil following harvest, and crop rotation. The rationale, objectives and process for an ISPC study on conservation agriculture were presented. Three papers will be commissioned in April / May 2012, to review the evidence regarding the following: Adoption issues (estimates of global adoption; constraints to wide-scale adoption); Impact on productivity and profits (evidence of cost-savings and yield changes from adoption of conservation agriculture); and Impact on the natural resource base and climate. A workshop is proposed for University of Nebraska, October 15th and 16th 2012, with a mix of approximately half CGIAR scientists and half from academia / multilaterals.

Several CGIAR scientists were then invited to present overviews of conservation agriculture research in their institutions: *JK Ladha* (IRRI), *Bruno Gerard* (CIMMYT), *Barat Sharma* (IWMI),

Suhas Wani (ICRISAT). *AK Singh* (ICAR) also gave an overview of Indian national research and policy initiatives on conservation agriculture. Much of the content of these presentations related to strategies for ecological intensification broadly defined.

In a subsequent panel discussion, the five presenters fielded questions from the ISPC and observers. The Chair asked whether we can predict where conservation agriculture principles will work and where it won't. *AK Singh* noted that adoption in the Indo-Gangetic Basin is well-established, at least for the zero-tillage component, although there is greater uncertainty regarding rainfed systems. *JK Ladha* questioned the relevance of all three components being adopted together. In rice systems, there is less need for retaining crop residues as the system is self-sustaining in carbon and researchers should avoid disrupting it, whereas in wheat, reduced tillage can work without being full "zero-tillage". Farmers understand that 1 or 2 passes across their fields will be sufficient rather than 6, and they benefit from reduced costs. Also, the message about not burning residues has gone out to farmers. *Bruno Gerard* expressed his opinion that decision support bodies are needed regarding where conservation agriculture will work and where it won't. Where have soils been degraded? In mixed systems there is a need to provide alternative options for feeding livestock if residues remain in the soil. This goes to the landscape scale in Africa where communal resources are used for feeding livestock. *Suhas Wani* expressed his opinion that vertisols are the most likely candidates for widespread adoption in rainfed systems. Again, the issue of crop residues needs to be discussed - whether maintenance of residue is a must for the system to function effectively. In many villages currently, after the harvest the cattle are let loose. Does conservation agriculture require fencing off the village? If so, it is unlikely to succeed.

Although the lack of economic studies in the set of presentations from CGIAR scientists was noted, all members of the panel expressed their opinion that adoption of conservation agriculture can be privately profitable for a range of farmers. *Mahmoud Solh* (ICARD DG) noted that ICARDA has a large program on conservation agriculture, and that crop residue is the important issue for farmers as it is such a valuable resource. The other bottleneck is availability of machinery, e.g. the private sector in Syria is now exporting affordable machines to neighbouring countries in the region. *Cassman* noted that the question of the machinery requirements raises the issue of minimum farm size for adoption, as only larger farms will be able to make profitable use of specialised drills etc. The panel's views on soil profile carbon sequestration from conservation agriculture were requested. *Wani* cited a vertisol watershed with pigeonpea residues with sampling up to 150 cm where it is possible to see increased soil carbon. However, for other cases, such as cereal systems, the evidence suggested that there isn't a carbon benefit. *JK Ladha* noted that carbon accumulation on a short-term basis is not sequestration. With conservation agriculture, you can observe surface carbon accumulation, but with sampling to deeper layers this disappears. However, it should be noted that residue mulch has lots of other benefits (e.g. reduced soil erosion, weed control). *JK Ladha* further explained that with residue retention, conservation agriculture results in increased biological activity. Without residue retention, zero-tillage alone may not result in such benefits.

Noting that there has been 30 years of research on conservation agriculture from the CGIAR in irrigated areas, the comparative advantage of the CGIAR on researching these areas was questioned. *JK Ladha* responded that there is now a second generation of post Green Revolution problems in Punjab and Haryana. The CGIAR are working through partnerships to help out on this, and can help raise production efficiency by moving away from puddling rice to for instance, direct seeding. *AK Singh* expressed the opinion that machinery research and dissemination could be a role for the CGIAR system and that that partnership with the CGIAR already has its benefits. *Gerard* noted that India is a special case and suggested that the CGIAR has been working too much downstream and outside its comparative advantage, given that the national programs are so strong in India. Instead, the CGIAR can learn from the South Asia experience with the hope of positively

impacting on the situation in East and Southern Africa. Sharma believes that the CGIAR can bring a perspective on the landscape / watershed level that would otherwise be missed – the national programs focus their research on the field level.

Adaptive research is important – conservation agriculture is not a silver bullet and we are still in the demonstration mode. We need to understand the processes through an innovation systems approach. There could be a significantly increased role for ICTs (especially mobile phones) in research.

Ken Cassman noted that the World Bank is looking into ways to pay farmers for environmental services, whereas there seems to be consensus on the idea of a high alternative value for crop residues. The package of conservation agriculture may not generally include residues, and so there may be little hope that resource-poor farmers could be sequestering carbon. Gerard expressed his opinion that carbon sequestration payments for smallholders are not very realistic. However, there are other pathways through which the adoption conservation agriculture could be incentivised such as reduction in whole-farm greenhouse gas emissions from reduced tillage. However, the institutional barriers to this are formidable – it is hard enough to get fertilizer to farmers, so getting carbon payments to farmers will be very challenging. Also, as noted earlier, with one ploughing event, the carbon accumulation is gone. JK Ladha expressed his view that the goal should be increased productivity. If we focus on per unit output, payments for ecosystem services will work. The mechanism for saving water is scale neutral: increase productivity.

In summary, it was important to think what kind of CGIAR should there be in 10 – 20 years time? Marcio de Miranda Santos responded that the short answer is the one that improves income for poor farmers in the world. The CGIAR first must understand that it is not alone in the world – a number of new institutions are active with the same goals. The new CGIAR must focus on contributing the best science that will help this goal to be met. Is the CGIAR competing within itself or is it promoting synergies across Centers to be efficient? The Chair suggested that the ISPC is trying to help the system to respond dynamically and efficiently. JK Ladha stated his belief that the CGIAR should aim to be seen as an honest neutral broker, especially with so much private sector investment coming over the next few years.

Agenda item 6. Independent Program Review

The ISPC Chair noted that this had been the major role of the ISPC in 2011 (and may have been perceived as the only role) but the individual review stage of CRPs was coming to an end in this round. CRPs 1.1 and 1.2 will come back to the ISPC for further formal review at some stage. We will be informed when the proponents are ready to do this but the ISPC has been licensed by the Fund Council to engage with the proponents of remaining CRPs. CRP1.3 had engaged with the Council and had agreed to provide the ISPC with their new proposal at the end of the inception phase. The ISPC and Center Directors agreed that the systems programs were of a different character from the commodity programs.

Jeff Sayer noted, with hindsight, that it would have been better to install a progressive approval process, since all partners and dimensions of the research plan could not be known at the outset. Mahmoud Solh noted that for CRP1.1 they were conducting ground work in five regions (west and central Africa, east and southern Africa, WANA, CAC and South Asia). They had held a meeting for all Centers plus the SSA-CP with ISPC-recommended consultants to lay out the terms of reference for this groundwork and there would be workshops in May/June on what work will be included in a first phase. It was noted that this should result in a proposal which lays out the hypotheses being tested by region.

Sirkka Immonen (ISPC secretariat) gave a presentation on considerations and options for an ISPC “guidance” review across all CRPs. The justification for such an analysis came from the realization that a transition was needed for steering the CRPs from a collection of on-going projects and initial plans to coherent programs addressing the SLOs with optimal inter-linkages and synergies. The ISPC having reviewed all the CRPs individually was in a good position for such a strategic overview. Immonen suggested that the analysis could address three types of issues. Firstly, it could support the priority setting by analysing the current state of alignment of the CRPs with the SLOs through clear theories of change and elaboration of the expected intermediate outcomes. Secondly, the overview could look at synergies, risks and gaps across the portfolio regarding research themes, sites and targeting. Thirdly, the ISPC could analyse strategic partnership issues. The analysis should use, to the extent possible, program operational plans rather than original proposals. Considering that the Consortium Office is also planning to conduct cross-CRP analysis, there was need to decide on the aspects where the ISPC could add value responding to the request by the Fund Council. Immonen summarised the roles of the ISPC in this analysis as providing input to prioritization, including identification of the intermediate outcomes towards the SLOs, inputs to portfolio coordination by the Consortium, and inputs to monitoring and evaluation by identifying the commonality and specificity of performance expectations.

The Consortium office representative noted that the planned ISPC analysis was in some ways similar to that planned by the Consortium, however she appreciated that different lenses would be used so that a dialogue between the two efforts should be established.

ISPC Members concurred with this approach, and the ability to perhaps look at more strategic elements above the CRP level, its coherence and means to reach the SLOs, appropriate metrics etc which protected the independence of the Council. The Fund Council would certainly be interested in the coherence of the system and current gaps and overlaps. Even so, it was probable that strategic elements may raise the requirement for analysis (e.g. genetic resources, conservation agriculture/NRM, water, livestock, health and nutrition) but this should be approached in terms of how research will deliver at the level of the SLOs. While the ISPC has a very limited role regarding individual CRPs at this point, the Council can send a strong signal that the CRPs need to go through a transition. There was agreement that the analysis of CRP-proposed linkages with the SLOs would be particularly relevant for the ISPC to do.

Agenda Item 7. Report of the Standing Panel on Impact Assessment (SPIA)

Derek Byerlee, Chair of the Standing Panel on Impact Assessment (SPIA), gave an overview of the structure, mandate and operational plan of SPIA, and welcomed new SPIA member and SPIA Chair-designate *Doug Gollin* to his first ISPC meeting. SPIA is in the process of recruiting a new member. Byerlee then gave a report of the activities carried out by SPIA since the last meeting and plans for the future.

Diffusion and Impact of Improved Varieties in Africa (DIIVA, 2010 - 2012). This 3-year, USD3 million project coordinated by SPIA and involving all 7 CGIAR commodity improvement Centers in Africa is updating critical adoption and impact information of improved varieties for over 100 crop x country combinations in SSA. Initial results of absolute and relative area under modern varieties (MVs) were presented at the FARA-ASTI meeting in Ghana in December 2011 and by the SPIA chair to BMGF in Seattle in March 2012. The three impact case studies (CIMMYT/Virginia Tech, CIP/CIAT/VT, ICRISAT/Africa Rice/U London) are expected to be completed at the end of 2012 and a final project workshop is scheduled for November 2012. A complementary study has been launched that will update the rates of return analysis for crop improvement in SSA.

Advancing Ex-Post Impact Assessment of Social Impacts of CGIAR Research (2010-2013). The goal of this study is to assess how technical change in agriculture may have differential effects on different indicators of well being, including poverty, hunger and food security, and nutrition. The four studies that were commissioned under this study (led by IFPRI, Worldfish, CIMMYT and IRRI respectively) run until mid-2013. A mid-term workshop will take place at the London International Development Center, 8th - 9th May 2012 where case-study leaders will present progress to date and receive feedback on their plans for finalizing the study from SPIA and a number of invited external participants. As a complement to these studies, SPIA members are working on a paper reviewing issues relating to measurement and causal identification in studies of poverty and nutrition (outline presented at the SPIA 41 meeting).

“Stripe” impact assessment: Legume research impacts (2011-2012). This is the first of a potential series of system-wide *ex-post* impact assessments in broad thematic areas (e.g., livestock, irrigation management are possible sequels). A scoping study was completed in December 2010 and a consultant’s report on the preparatory phase narrowing down on possible cases—although there is still a need to fill big gaps in adoption information - was completed in July 2011. SPIA is currently working towards the definition of 3 crop x country combinations: cowpea improvement in Nigeria (with IITA), chickpea and pigeonpea in India (with ICRISAT), and pigeonpeas in Tanzania (ICRISAT). The study will draw on results from the DIIVA project to document the “beans in Africa” impact story. Plans are also underway to link up with the World Banks’ Living Standards Measurement Study (LSMS) surveys to scale up results.

Germplasm collection, conservation, characterization and evaluation (GCCCE) (2010-2012). This is an under-evaluated activity of the CGIAR, with little documented evidence of impact to-date. The first phase of this study developed a conceptual framework and methods to be applied in future efforts to estimate these types of impacts. Focusing on the direct use of germplasm in the second phase, SPIA commissioned three Center case studies (from CIP, CIAT and CIMMYT) to demonstrate proof of concept for the economic value of genebanks / GCCCE research, as manifested through input to the process of breeding varieties with specific traits. Draft case-study reports on Coop 88 potato in China, KU50 Cassava in Thailand and Russian Wheat Aphid have been submitted and are now being reviewed; initial estimates of returns are high, but some issues related to the counterfactual need attention.

Communications and Outreach. a. Publications. With the completion of a 3-year study to assess the impacts of CGIAR research on the environment a number of publications have emerged or are in the pipeline, including a green cover report, 4 impact briefs, and 3 articles submitted to journals. An extended brief examining the feasibility of using randomized control trials in *ex post* impact assessment is also being finalized and will be posted to the ISPC and Impact websites.

b. Plans for conference-associated workshop on impact assessment and a meeting of Impact assessment focal points (IAFP) from the Centers. SPIA is organizing a special pre-conference session on impact assessment at the IAAE conference in Brazil in August 2012, and will work with the journal editors of *Food Policy* on a special issue, based on a call for proposals in advance of the meeting. Invited speakers and session topics have also been identified, and papers selected for presentation and posters (half of the participants are non-CGIAR). SPIA continues to interact formally and informally with the CGIAR Center IAFPs on a range of issues. A SPIA-IAFP meeting is planned for mid-2012 in Brazil.

c. Website. The <http://impact.cgiar.org> website had 3 times the number of visits in February 2012 than a year ago, reflecting positively on the redesign of the website and SPIA’s strategic shift to direct traffic to the website for communications regarding projects and outputs.

Strengthening impact assessment and accountability in the CGIAR System (2013-2017)

Interest has been expressed by several donors (BMGF, DfID, EC, IFAD, USAID) about two issues related to impact assessment in the new CGIAR: (i) the real risk that epIA will be dropped while we await impacts from the new CRPs—continuing the work on *ex post* impacts based on the pre CRP era will be needed for many years by donors and other stakeholders; and (ii) the need to build on the experience of SPIA and the Centers in impact assessment in terms of setting up results indicators and baselines in the new CRPs. The initiative is intended to provide donors and other stakeholders with up-to-date evidence of the efficacy of investing in international agricultural research, and at the same time building capacity within the System to undertake regular epIA for tracking implementation of the new CRP portfolio against SLOs, in particular providing indicators and baselines for the CRPs. Four major objectives relate to:

- methods – focused on improving reliability of adoption data and cost effectiveness;
- outcomes - focused on collection of data on adoption of CGIAR-derived crop, livestock and NRM technologies on a regular basis to support the new CGIAR's M and E;
- impacts - focused on deepening the understanding of the impacts of CGIAR research on SLOs
- capacity building - focused on strengthening capacity with CRPs/Centers to conduct high quality epIA of CGIAR research via a competitive post-doctoral program.

This would be a major initiative for SPIA, expected to commence in 2013, but requiring considerable effort by SPIA and partners in 2012 in terms of planning. Byerlee highlighted several issues that still need to be resolved, such as, the governance and management arrangement, the role of the Consortium, consultation with CRPs, and the balance between competitive versus commissioned work.

Byerlee ended on a personal note (this being his last ISPC and SPIA meeting) in stating that while much progress has been made, there is much still left to do. Capacity is being rebuilt, he noted, but we are still lacking essential baseline and adoption data (for future epIA). We also need larger and more determined efforts on NRM, livestock, nutrition, and policy research, but he also recognized that establishing influence may be sufficient in many cases. We need to meet donor expectations with respect to measuring impacts on the SLOs, recognizing the analytical trade-offs implicit in breadth versus rigor. Finally, there is, thus, far little evidence of feedback from epIA into priority setting and the SRF.

The ISPC Chair thanked Byerlee for his clear presentation and stressed the complementarities between SPIA's and ISPC's work – that knowledge gained from IA and understanding of the impact pathway feeds back into priority setting (and to the ISPC).

In response to questions, Byerlee responded that the DIIVA study is not CGIAR-specific, but covers all improved varieties (and full pedigree). Constraints to adoption are not a major focus of SPIA but many Centers are focusing on this. The strength of funding for NARS is still insufficient, and this needs addressing. As the G-8 is targeting 60% adoption of MVs in SSA by 2020, this may bring in more support for NARS in the future. But NARS are still fragmented, small, and overburdened, so DIIVA hasn't solved this problem. A comment was made about the relative ease of documenting varietal improvement versus agronomy – noting that agronomy has played a key role in CGI success. NRM also has lots of indirect effects, publications for example, but how to capture these? The ISPC Chair indicated that there are a number of metrics for NRM, like N efficiency and water use efficiency. Had these been measured 20 years ago we could now capture impacts. Byerlee also mentioned that in some cases documenting influence would be sufficient, e.g., CIFOR's influence on the REDD. He noted that donors were keen to see some cases which document impact (or influence) covering all research investments. A donor representative noted that

from their perspective, distinguishing between (i) no impact and (ii) inability to measure impact, is important and they are interested in seeing impact from NRM research.

One observer (Center DG) raised a concern about the new initiative being developed by SPIA, explaining that these four elements (method, outcomes, impacts, capacity building) were already in the CRPs and wondering whether this would ‘get in the way’ of the CRPs. Is this a data or methods problem? Byerlee assured him that this needs a coordinated effort and that SPIA would collaborate with the CRPs, Centers and the Consortium. SPIA considers the problem mainly one of data limitations, but methods also need to be constantly updated. For example, in trying to do IA on the SLOs there are serious “cause and effect” challenges. It may be better to focus on intermediate metrics, rather than less tractable ones (the ultimate SLOs).

In closing, the ISPC Chair thanked Byerlee for his excellent contributions to SPIA and the ISPC and then warmly welcomed Doug Gollin to the ISPC.

Agenda item 8. Mobilizing Science

i. Brief Report on Science Forum Outcomes

Jeffrey Sayer (ISPC Member), reported that the Science Forum had been pursued as the principal means of the ISPC exercising its role in the mobilization of science. The intention was to look for cross-cutting issues (affecting the majority of Centers or, now, programs) and where there were the opportunities to bring in new science and new partners for the CGIAR. The Science Forum in Beijing in October 2011 had focused on one topic, the agriculture-environment nexus, albeit from different aspects which were reflected in the different sessions held. A summary of the meeting and these sessions had been placed directly on the ISPC Website and a synthesis Brief on the outcomes had subsequently been prepared (also available on the website). The Council was currently in conversation with the editor of the sustainability science section of PNAS on the basis of 11 -13 abstracts from the Forum that would be developed as full papers by the 31st of May. He and the ISPC Chair would review the papers and they would be published (subject to meeting journal requirements) as a special volume to highlight the scientific outputs of the Forum.

On the lessons learned from the Science Forum, Sayer suggested that whilst there were some very good papers (as per the foregoing) there was still a tendency to have too much descriptive material at these events, for instance there could have been greater participation of environmental scientists rather than representatives of key organizations. It had been important to have interactions with local scientists and the Council appreciated all the support that they had received from CAAS in the development and staging of the meeting. However, perhaps more could have been done by the Steering Committee to expand the interface for such links and to spend time prior to the forum in forging connections in such a large country with many potential contributing institutes. However, the focus was on science for the CGIAR and at a total cost of less than USD250,000 for an international conference it had provided good value for money. Reaction to the conference had been good from all quarters and outcomes and materials from the Science Forum had already figured in donor documents. The need would be to decide on subject matter for the next Forum as soon as possible and to advertise the event widely amongst relevant scientific communities.

ii. Exploring some of the constraints to the contribution of agriculture to human nutrition

Maggie Gill (ISPC Member) led the discussion session and introduced the speakers. She noted that improving nutrition and human health is a new System Level Objective (SLO) for the CGIAR and that all the CRPs have made reference to nutrition in one way or another. CRP4 has selected approaches based on value chains, biofortification and zoonoses to enhance the integration of agriculture with health program activities and policies. However, the nutritional field is in much the same state as the environment field was a few years ago and the science to impact linkages need to be explored as well impacts measured. Certainly, we cannot assume that just by making nutrients available through agriculture that we automatically address under-nutrition as income, gender and policy issues (amongst other things) enter into making effective changes in human nutritional status. This discussion was being launched under the Mobilizing Science theme for the ISPC to explore how it might support future research agendas and partnerships in this area of integration.

Invited speaker, Professor *Alan Dangour* of the London School of Hygiene and Tropical Medicine, gave his talk on *Exploring some of the constraints to the contribution of agriculture to human nutrition* by video link. He noted that there are many points of interaction between agricultural production and the food system with human nutrition and health. Thus adequately defining the links (conceptual frameworks) between agriculture and nutrition/health was a prerequisite to then defining research questions about which way agriculture could enhance nutrition. Research options would differ depending whether the field was approached from the perspective of agricultural development strategies, agricultural policies or agricultural interventions. They would also be slanted if one was seeking environmental (e.g. climate) or economic outcomes from the approach. For example, work¹ seeking to define if there are benefits to nutrition associated with selection of low-impact agricultural development strategy suggested that a 30% drop in animal source food production required to meet a UK GHG target for 2030 could provide significant co-benefits to health (from reduction in associated animal fat intake). Economic analyses of similar interventions² could also be made to judge collateral effects. Outcomes are likely to vary by country, as the work found a large health benefit might accrue from the adoption of such policies at low economic cost in the UK, but following a similar analysis that there were lower health benefits (lower saturated fat intake) and large economic costs in the case of Brazil (which is major meat producer). Thus there are likely to be winners and losers from similar approaches and there are confounding issues at the level of sectoral and population responses. There is more to be learned about the effects of substitution, and policy efforts to meet more than one guideline. An emphasis on securing a 'healthy diet' will affect population nutrition *and* economy.

Dangour suggested that there were opportunities to improve food and maybe nutrition security, and to incentivise agricultural productivity/ employment/ economic growth through examination of the effects of agricultural policies. Some policies may hold threats of un-intended consequences – such as the rise of non-communicable diseases following agricultural intensification. There were also important considerations for a group like the CGIAR in identifying national versus vulnerable groups, disease risks, and possible environmental change from agricultural policies. To date amongst evaluations of agricultural policies that directly affect the price of foods (n=14,500+) there are very few that look at the effects on price policy to foods (550 of these papers), consumption (85) or the affects of policy on nutrition (4). He suggested that the reasons for the paucity of evidence were that there are many links in the causal chain; lag effects as behaviours take time to change; factors that lie outside the control of food and agriculture policy condition nutrition outcomes; there

¹ Friel, Dangour, Garnett et al. (2009) Public health benefits of strategies to reduce greenhouse-gas emissions: food and agriculture. *Lancet*, **374**, 2016-2025

² Lock, Smith, Dangour et al. (2010) Health, agricultural and economic effects of adopting healthy diet recommendations. *Lancet*, **376**, 1699-1709

are few professional incentives for those implementing (and evaluating) food and agriculture interventions to measure nutrition; and, the disciplines are disconnected.

Turning to agricultural interventions he noted that on the evidence of a recent systematic review³ there was very little concrete evidence for direct effects of agriculture on nutritional outcomes. However, study design contributed to many of the failings (non-randomised approaches, unmatched control groups and generally very small sample sizes). Outcomes were also judged by different parameters, such as food intake, anthropometry, household income, serum retinol etc. There is clearly a need for more/better evidence and there are important opportunities to evaluate the impact of agricultural interventions on nutrition. However, much clearer thinking is needed on how to design appropriate studies.

Dangour concluded that as there are multiple theoretical routes from agriculture to nutrition and health, the CGIAR and its partners must judge whether all routes are amenable to research. Generating evidence requires careful analysis of likely impact and so it is worth taking the time to frame tractable research questions at this early stage of the CGIAR focussed approach. Multi-disciplinary thinking will be needed.

Dr B Sesikeran of the National Institute of Nutrition, gave a paper on *National Nutrition intervention Programs in India, Impact and Bottlenecks*. He noted that as a result of the Green Revolution, severe forms of malnutrition have reduced significantly between the 1960s and 2006 but that child malnutrition and stunting remained a problem in India despite the country's continuing development. He summarized the findings of five National Nutrition Intervention Programs: 1. Integrated Child Development Service Scheme (ICDS); 2. Mid Day Meal Program (MDM- primarily not a nutrition Intervention); 3. National Prophylaxis Program for control of Vitamin A-deficiency; 4. National Prophylaxis Program for control of Nutritional Anaemia; and, 5. National Control of Iodine Deficiency Disorders (IDD).

India's national nutrition goals that were planned to be achieved by 2000 are bulleted (with actual progress in brackets)

- Reduction in moderate and severe under-nutrition by half (1993: 60% - now 46% underweight, 38% stunted).
- Reduce incidence of low birth weight (LBW) to less than 10% (now 30%)
- Elimination of blindness due to vitamin A deficiency (zero level although the sub clinical condition still exists)
- Reduction of IDA pregnant and lactating women to 25% (now 70%)
- Universal iodization of salt for reduction of IDD to 10% (goal almost achieved)

He noted that India has food (the target production of 250 million tonnes of food grains was achieved by 2011-12) but it is not always reaching the populations that need it. Thus the ancillary targets of improving household food security through poverty alleviation programs and promoting appropriate diets and healthy lifestyles have yet to be achieved.

Dr Sesikeran noted that the size of the expenditure in India during past 40 years and the launch of several large scale nutrition programs (cited above) indicates that policy makers and administrators had recognized the urgent need to control malnutrition. Whilst malnutrition is everybody's business, at the same time the problem is multidimensional and no one owns the responsibility. Strategic execution and management of such programs is critically important because of the interrelated contexts, over and above direct micronutrient fortification.

³ Masset et al. (2012) Effectiveness of agricultural interventions that aim to improve nutritional status of children. *BMJ*, 344, d8222

The role of the agriculture sector is to increase yield, reduce post harvest losses, control biotic and abiotic stressors, develop nutritionally enhanced crops, improve soil nutrients, prepare for adverse agro climatic events, to bring back traditional crops and at the same time fast tracking technological advances. In virtually all of these cases there are direct and indirect means of either improving human nutrition or for examining the consequences of such innovations on human health and nutrition. However, it would be important to think of the balance of the overall approach. For example, he suggested that production of cereals in India would be supported through a new Food Security bill, but that pulses would not (and hence a protein gap for the poor would remain.) Fruit and vegetables are produced in quantity but currently are too costly for the poor. He recommended the promotion and use of nutritionally advantageous traditional crops according to local situations.

Bhavani Shankar of the School of Oriental and African Studies (SOAS), University of London and Panel Member of SPIA provided a paper on *Trends and policies in the agri-food sector and their impacts on diets/nutrition*. Shankar provided an update on a Review that was being prepared for the International Conference on Nutrition (ICN plus 20) planned by the FAO and WHO late in 2013. The review was examining the evidence on influence on diets (1990 onwards) and he distinguished between diets and nutrition, diets being an input into nutrition. The focus would be on food, policy and producer food prices.

The implications of the recent food price crisis for nutrition were that the poor, the landless, the net food buyers (most likely the urban poor) were the hardest hit. Groups minimise calorie reduction (hunger) by cutting out more expensive sources of calories (livestock products, fruit and vegetables). Thus diet diversity and micronutrient intake are the first casualties of the food cost rises. However, in prolonged crisis there is a sharper reduction in calorie intake and intra-household reallocation. There have been some unexpected effects (when wheat price inflation and sharply reduced diet quality in Afghanistan, described in economics as a Giffen good). The crisis also underscores the relevance of staple cereal availability and prices to diet diversity and quality.

In relation to producer support, domestic support to producers has been implicated by the public health community in diet deterioration. But recent European and US research does not provide a basis for this. Commodity prices have only a small influence on food prices. Developing countries provide less producer support to start with, but show stronger links between commodity and food prices. There is little research so far linking producer policy to diets.

There has been a 3 to 4% growth in the agriculture sector globally 1993-2005. This growth was helped by lowered policy distortion, but hindered by falling public investment. There is the assertion that agricultural growth has effects on nutrition, poverty and food prices. For instance, Headey (2011) has shown that agricultural growth significantly lowers stunting prevalence. Similarly agricultural growth very strongly improves dietary energy supply, but agricultural growth does not seem to have robust effects on diet diversity. And, in India (as outlined above) child nutrition is lagging behind agricultural growth at the aggregate statistical level. Many reasons have been put forward for the anomalous situation in India and it is a matter of current research (e.g. the DFID-funded LANSAs project 2012-2018). The project is designed to address some of the questions raised in the discussions, i.e.: (i) How **enabling** is the wider context in linking nutrition-sensitive agriculture and food systems to other determinants of nutrition status? (ii) How can agriculture and food systems become more **nutrition-sensitive**? (iii) What is the scope for embedding **nutrition innovations** within specific agricultural interventions?

In conclusion, Shankar noted that agriculture and nutrition is a complex and multi-sectoral problem. It is more than food and more than calories, and as such there has been a temptation to overestimate

the potential role of agriculture in providing direct solutions. There is substantial heterogeneity amongst countries, populations and their food systems. Nevertheless, there is a large opportunity for the agricultural sector to contribute if the public health community are convinced of the importance of the linkage. However, a fundamental prerequisite is to start plugging the large gaps in the evidence base.

In discussion, additional perspectives that were raised were that there were ethical issues in conducting nutritional experiments and it was agreed that community sensitization was part of requirements. There were country-level issues of coordinating policy across sectors. The issue about the production and availability of fruit and vegetables at scale was not a straightforward matter as whilst government policies encourage backyard fruit and vegetable production, large scale production was captured by the private sector with different consumer sectors in mind. One may compare it with the situation with milk in India, where milk is sold and doesn't have a direct effect on *local* nutrition. The particular circumstances of India were discussed and the expectation that more disaggregated statistics and various socio-cultural patterns may be part of the reasons explaining the anomalous relationship between agricultural growth and nutrition in this country.

In closing, the ISPC Chair noted that, on the basis of the issues outlined in this session, that the ISPC were considering the subject (the ways in which agricultural research could impact on human nutrition, other than simply through livelihoods) as the potential theme of Science Forum 2013. He invited feedback from the constituencies represented at the meeting and said that he would be sharing the idea with the Consortium and the Centers.

Agenda Item 9. Partnership: A discussion of the role of the ISPC in partnership

The Chair, noting that ISPC Member Rashid Hassan had been anticipated to co-lead the discussion of this Agenda item, but had been prevented from attending by a family tragedy, asked that the meeting observe a moment's silence.

Subsequently, ISPC member *Vibha Dhawan* introduced the item. She emphasised that the CGIAR needs to work with NARS, regional and international fora, research organisations, the private sector, NGOs, and also considering a multi-tier consumer structure: farmer, consumer, value chain, retailers etc. Increasingly intellectual property is becoming an issue with the types of partnerships and technologies in which the CGIAR engages. This raises the issue of access and affordability for developing countries, and investment in IPGs more generally. Another issue is the CGIAR's relationship with NARS given that NARS have limited funding. Is the CGIAR a "club of the elite"? There was a broad ranging discussion where the following issues were raised:

- CRPs seem to consider it necessary to have a partner in each country, but this easily leads to complications regarding management, IP, contractual issues, transfer of technology etc. CRPs can be conceived of having four categories of partners: (i) the actual research partners collaborating in the CRP who have the knowledge and science to move forward the research program; (ii) research facilitators, to help operationalize the research in specific partner countries; (iii) development partners who allow results to become innovations, and products and processes reach the client; and (iv) generic partners who are identified at the institutional level without specifying further (e.g. EMBRAPA and others) and therefore form a group of "political support".
- It is common that NARS partners are dealt with as a collective group but not identified and yet many are research partners. It was noted that national partners work with the CGIAR because they are also recipients of the research results. However, for national partners it isn't easy to

understand what the CRPs are and better consultation is needed to explain this change in the CGIAR.

- CRPs should be encouraged not to maximise, but to optimise - or even minimise, partnerships. It was noted that there should not be partnerships for the sake of partnerships particularly as the current CGIAR funding is not sufficient for major funding of partners. Prioritizing partnerships is essential but a challenge. Recently CRPs have received more money to manage CRPs and organize workshops for planning with partners.
- The ISPC can think of mechanisms and modalities for engaging the appropriate partnerships and including wide enough groups. This can be done by organizing meetings such as the Science Forum with focus on approaches that contain partner involvement and partners' notions. We need to realise that inputs necessary for agricultural sector are coming from other sectors and the ISPC can facilitate this flow.
- As the frequency of the SF is low and the agenda high, consideration could be on convening other fora to "decentralise" the events. It was noted that CRPs convene in this way.
- One area where the best available knowledge may come from outside the CGIAR is ability to deal with and synthesise huge amounts of data and information.
- An additional role played by the private sector was their role in assisting or galvanising dissemination of products.
- In keeping with its strategic role, ISPC can broker with other large bodies of knowledge generation. There are other large programs outside the CGIAR that can be potentially aligned with the CGIAR.
- The value of short-term informal partnership relations needs to be recognised. Exciting things come from groups around emerging ideas in rapid and dynamic way.
- An important area of partnerships is to consider how the research outcomes lead to development outcomes. Whether the ISPC has a role to play is open.
- It was noted that given the performance arrangement, the CRPs can be left to organise their partnerships in optimal way for specific purposes without imposing mechanisms.
- Lists of partners in CRP proposals are based on real partnerships. The CRP development encouraged a research planning mode which has involved partners. There are good signs that this may be leading to improving partnerships.
- In the future, it would be worthwhile to take stock of how partnerships develop under CRPs and, for instance, whether the programs attract the very best of the university scientists. It was noted that partnerships will be included in the monitoring within CRPs.
- The idea of linkage programs and sabbaticals was raised. A way to enhance such linkages is the ability by Centers to host young career academics. There are also linkage funds, and informal donor schemes to support young scientists' stay at Centers. It was noted that partnerships are also a form of capacity building through mentoring, particularly for young scientists, such as through the previous "RockyDoc" program.
- Regarding the ISPC's role; it was noted that partnerships still come down to individual scientists' contacts. ISPC's role enhancing those interactions and opportunities is welcome. The Science Forum is a means to advance those opportunities and should involve young scientists and not only seniors and managers. A useful role would also be enhancing scientist exchange. In these roles the independence of the Council is a benefit and it would also allow ISPC to view how partners perceive the programs.

Agenda item 10. Other business

Date and venue of the next meeting: The Chair noted that offers had been received to stage the next (autumn) meeting of the ISPC in Africa. In their closed session, the Council accepted the invitation of ILRI to hold the ISPC meeting at its Addis Ababa campus between the 26th to the 29th of September 2012.

There being no other business, the Chair thanked the meeting participants for their contributions and all the staff from ICRISAT and ICAR who had helped in the staging of the meeting. The meeting was then closed.



28 March 2012

Meeting Agenda

5th Meeting of the Independent Science Partnership Council 26-29 March 2012

ICRISAT-ICAR
NASC complex, New Delhi, India

Sunday 25th March

SPIA Meeting

Arrival of ISPC members

ISPC dinner (19:00 hours at Paatra Restaurant at the hotel)

Monday 26th March

09:30 *ISPC closed session (Siddharth Hotel – Conference Room)*

12:30 *Lunch and transfer to NASC Complex*

Monday PM 26th March

14:00 **1. Opening of the ISPC Meeting**
i. Welcome and opening from ISPC Chair: Ken Cassman
ii. Welcome from ICAR Director: Dr Ayyapan
iii. Welcome from the DG ICRISAT: Willie Dar

14:45-16:45 **2. CGIAR progress update**
i. Ken Cassman (ISPC Chair)
ii. Stefania Grando (Consortium Office)
iii. Ganesan Balachander
iv. Jonathan Wadsworth (Fund Office) *(by video)*

16:45-17:30 **2 (ii) Update on the CRPs**

- i. Update on CRP review activities so far in 2012 (ISPC Chair)
- ii. Update from ICRISAT on the implementation of CRPs 3.5 Grain Legumes and 3.6 Dryland cereals (David Hoisington)
- iii. Update from World Fish on CRP 1.3 Aquatic Agricultural Systems (Stephen Hall)

19:00

Reception for participants

Tuesday 27th March

**09:00
future**

3. Strategy and trends: Finding convergence on views of the

Introduction: Ken Cassman “Crystallizing the ISPC workplan on foresight”

The future of Agriculture - trajectory of change

Presentations:

- Ashok Gulati (CACP-India): “The changing face of farming (farmers and farms) in India (15 mins)
- Steve Wiggins (ODI): “Farm size dynamics in different continents” (30 mins) *(by video)*
- Surabhi Mittal (CIMMYT-India): “Food demand/supply trends and projections in India” (15 mins)
- Tom Reardon (MSU): “Projected changes in the global demand for food” (30 mins) *(by video)*

Open discussion

11:00

Coffee break

11:30

4. Strategy and trends: Setting priorities/ learning from others

- Presentation of lessons learned from previous priority setting exercises (Secretariat paper presented by Sirkka Immonen) (20 mins)
- Brief summary of history and current status of research prioritization framework for the SRF. (Led by Derek Byerlee)

Open discussion: tools and approaches for prioritizing across the CGIAR research portfolio, what is needed beyond this?

12:30

Lunch

- i. Report on activities since last meeting
- ii. Introduction of the new Chair
- iii. Donor requests for increased impact assessment and meta-review of CGIAR impacts
- iv. SPIA program in 2012/13

12:30

Lunch

14:00

8. Mobilizing Science

- i. Brief report on Science Forum 2011 outcomes (Jeff Sayer)
- ii. Exploring some of the constraints to the contribution of agriculture to human nutrition (Led by Maggie Gill):
 - Presentation: “Exploring some of the constraints to the contribution of agriculture to human nutrition” (Alan Dangour - LSHTM) (30 mins)
 - Presentation: “The Indian experience of achieving nutritional outcomes through institutional interventions” (Dr B Sesikeran, National Institute of Nutrition ICMR) (15 mins)
 - Approaches and results from feeding trials in India (10 mins) tbc
 - Presentation: “Policies in the agri-food sector that have impacted on global diets” (Bhavani Shankar – SOAS/SPIA) (10 mins)

15:30

9. Partnership: A discussion of the role of the ISPC in partnership

16:30

10. Other business

- i. Participants invited to raise other business
- ii. What do donors and the Consortium require in terms of information and communication from the ISPC?
- iii. Potential site and dates for next meeting

17:00

Close of the Open meeting



Meeting Agenda

5th Meeting of the Independent Science Partnership Council 26-29 March 2012

ICRISAT-ICAR
NASC complex, New Delhi, India

Thursday 29th March

- 08:00** ISPC closed session (*Siddharth Hotel – Conference Room*)
- 10:30** Transfer to NASC Complex
- 11:00** **11. ICAR strategy**
- A closed discussion session between ICAR and the ISPC on the challenges to Indian agriculture and strategies to address them.
- 13:00** *Lunch hosted by ICAR at the NASC Complex –ground floor*
- 14:00-17:00** **ICAR day continued.** (*Symposium Hall of NASC Complex*)
- An open session
- Ken Cassman,*
Robert B. Daugherty Professor of Agronomy, and Chair, University of Nebraska, Lincoln
will be presented by *Dr Ayappan* and will give a presentation

Annex 3 – List of Participants

Fifth ISPC Meeting March 2012 – LIST OF PARTICIPANTS	
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