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**Working Paper**

## International science and policy interaction for improved food and nutrition security: Toward an International Panel on Food and Nutrition (IPFN)

ZEF Working Paper Series, No. 142

**Provided in Cooperation with:**

Zentrum für Entwicklungsforschung / Center for Development Research (ZEF), University of Bonn

*Suggested Citation:* von Braun, Joachim; Kalkuhl, Matthias (2015) : International science and policy interaction for improved food and nutrition security: Toward an International Panel on Food and Nutrition (IPFN), ZEF Working Paper Series, No. 142, University of Bonn, Center for Development Research (ZEF), Bonn

This Version is available at:

<https://hdl.handle.net/10419/142725>

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## Working Paper 142

JOACHIM VON BRAUN AND MATTHIAS KALKUHL

### International Science and Policy Interaction for Improved Food and Nutrition Security:

Toward an International Panel on Food and Nutrition (IPFN)



ZEF Working Paper Series, ISSN 1864-6638  
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Center for Development Research, University of Bonn  
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# **International Science and Policy Interaction for Improved Food and Nutrition Security:**

## **Toward an International Panel on Food and Nutrition (IPFN)**

Joachim von Braun, Matthias Kalkuhl

# 1 Introduction

Establishing and maintaining the socio-economic, public health, environmental and political conditions for food and nutrition security is a high priority of societies and decision makers. As many people in the world are still deprived of sufficient access to nutritious food and healthy living conditions (see Table 1), the Sustainable Development Goals (SDGs) postulate for 2030 to “end hunger, achieve food security and improved nutrition and promote sustainable agriculture” (Goal 2). Achieving this goal is not possible in isolation, as it is closely connected to progress in other domains mentioned among the SDGs, e.g. “Ensure healthy lives and promote well-being for all at all ages”(Goal 3), “Achieve gender equality and empower all women and girls”(Goal 5), “Ensure availability and sustainable management of water and sanitation for all”(Goal 6), “Ensure sustainable consumption and production patterns”(Goal 12), “Take urgent action to combat climate change and its impacts”(Goal 13), “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”(Goal 15), as well as the primary goal of “End poverty in all its forms everywhere” (Goal 1).

Achieving food and nutrition security will not only require strong commitment by policy makers but also solid scientific knowledge and transparent public discourse on instruments, synergies, trade-offs and risks. Even beyond 2030, the stability of the global food system will remain being exposed to environmental and health risks (IPCC 2014, ELD Initiative 2015), population pressure (Gerland et al. 2014), constraints in production, disruptions in trade or conflicts. Tackling that science agenda is not a project or a study, but calls for a permanent mechanism that draws systematically on the global science capacities in new ways currently not available.

Table 1. The Multiple World Food and Nutrition Problems

<b>Problems</b>	<b>Numbers of people</b>	<b>Consequences</b>
Hunger (Under-Nutrition, calories)	ca. 0,8 Bill. (crude estimate)	acute deficiency, political conflicts
Hidden Hunger (deficiencies of micro-nutrients, vitamins, iron etc).	ca. 2 Bill. (crude estimate)	diseases, reduced productivity
Children’s under-nutrition (the first 1000 days)	ca. 165 Mill.	stunting, reduced physical, cognitive development.
Obesity and resulting chronic diseases	ca. 1 Bill.	high costs of public health

Source: derived from data presented in Black et al. (2013) and FAO (2013)

Scientific knowledge is a global public good, provided by a large diversity of individuals, local, national and global research institutions and financed at different scales by governments, donors, private enterprises or international organizations. An optimal provision of public goods requires coordination (Ostrom 1990), and needs to ask: How much knowledge should be provided? Who provides knowledge? What are research gaps and priorities? The current institutional arrangements for the policy and science interactions are not equipped to comprehensively address the huge task of guiding toward a world without hunger and malnutrition. An approach toward design such policy-science interaction, partly based on established building blocks of international organizations and science networks is proposed here. Some initiatives actually are already moving in this direction. To move the process forward more swiftly and less ad hoc needs high-level initiative. A Scientific Steering Committee established in the context of the EXPO 2015 on “The Role of Research in Global Food and Nutrition Security” has noted the limitations of current systems, as well as opportunities for innovations (some related sources, such as this one, are listed as references below).

The framework proposed here for improved policy and science interaction in food and nutrition security (FN) builds on the experience of the *Intergovernmental* Panel on Climate Change (IPCC), however, not simply copying this institutional arrangement, but merely aiming for an *International* Panel on Food and

Nutrition Security. It should operate efficiently at low administrative and organizational transactions costs. Such an institutional innovation to synthesize and assess knowledge relevant for decision makers would bring about four important advantages compared to the current system (Kowarsch 2014). It would

1. better reflect the **diversity and presence as well as lack of consensus** in international science insights and knowledge from different disciplines and countries, and may resolve key issues with new research,
2. improve **exchange and coordination** among science disciplines and research efforts at scale,
3. increase **transparency** in the synthesis and assessment process based on rigorous peer cooperation and peer review, and
4. increase the **legitimacy** of assessments and recommendations to governments and society.

These four advantages are particularly important for areas with high controversies either due to conflicting scientific findings or due to controversial ethical views in assessing and valuing different measures and options to achieve social goals like food and nutrition security (Edenhofer and Kowarsch 2015). Besides regular assessments on the state of food security *research* (on academic advances and deficits – not on description of developments), the strength of such an institutional arrangement would be to deal with controversial and conflict-laden assessments, for instance on nutrition interventions, market stabilization policies, technologies and innovations (potential, risks, regulation), land use change, land ownership (incl. land investments) or multi-level governance structures and responsibilities that often paralyze decision-making. Before outlining options for the way forward, the current state of affairs in science and policy related to FN, shall be briefly visited.

## 2 Science Systems addressing FN

Science systems related to FN are embedded in national science systems but with a large and increasing sets of international linkages, as well as some international entities. The main building blocks are

- The university systems with FN and public health related faculties
- National Academies and international Academy networks in general and with a focus on FN and health
- National food, nutrition, and agriculture related research organizations
- Private sector research (mainly in high income countries)
- The Consultative Group on International Agricultural Research Centers (CGIAR) with its programs
- the High Level Panel of Experts on Food Security and Nutrition (HLPE)
- The professional academic associations related to FN, broadly defined (incl. e.g. international Nutrition, Food Science, Crop science, Soil Science, Animal science, Agricultural Economics associations etc.)

All these entities serve important roles in moving the science frontiers in FN, and selectively engage with policy, be it on demand by policy bodies or be it by soliciting policy advice. However, they do not come together as organizations to address key policy challenges in FN across disciplines. An exception is the CGIAR in the field of FN related development issues, but the total science resources of the CGIAR cover not more than about 3 percent of total world science capacities in FN; another exception is the recently established Interacademy Partnership (IAP), a new organization of academies bringing together established global networks of academies of science, medicine and engineering into a collaboration in which academies work together to support the special role of science and its efforts to seek solutions to address the world's most challenging problems, incl. an initiative on FN started in 2015.

### 3 Policy System addressing FN

The policy system on FN represents the demand side for science based insight. FN policies are national, regional, and international, with many interactions and externalities among these levels. The SDGs emphasize national responsibilities for action. The roles and structures of the global organizations addressing food, nutrition / health, and agricultural issues have evolved over the past six decades. International civil society and governmental organizations also play increasing roles.

- national governments, mostly with multi-level structures
- civil society organizations
- G7 and G20 initiatives
- Organisation for Economic Co-operation and Development (OECD)
- World Health Organisation (WHO)
- Food and Agriculture Organization of the United Nations (FAO)
- World Food Programme (WFP)
- International Fund for Agricultural Development (IFAD)
- United Nations Children’s Fund (UNICEF)
- United Nations Environment Program (UNEP)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Convention on Biological Diversity (CBD), and its mechanisms
- United Nations Convention to Combat Desertification (UNCCD)

All these organizations serve important public goods functions, and all make important contributions. Furthermore, they all draw in one way or the other on specific science communities for advice, but the science advice is thereby segmented and coherence of evidence based science advice cannot be assured, and conflicting evidence is not resolved.

International public goods provisioning increasingly occurs also through a complex global web of government networks, where a collection of nation states communicate via heads of states, ministers, parliamentarians and the UN, and where corporations and NGOs participate in various ways. Networks of national governments and even province level governments and of cities, whose officials come together on a regular basis to exchange information, co-ordinate activities, and adopt policies to address common problems at a global scale. They already play key roles in international policy domains such as public health, crime prevention, and energy but not enough in areas of food, and nutrition. Furthermore, civil society organizations at national and international levels are engaged in the policy process and play important roles in shaping policies, such as consumer groups, environmental organizations, farmers’ organizations, etc. They also play a role in shaping science policy agendas.



## 4 Drivers of change

The science- and the political systems related to FN are both confronted with drivers of change of context in FN, which calls for new and more goal oriented forms of interaction among the two:

1. Demographic transformations with population growth, urbanization, rural aging in many parts of the developing world establish new structures and science challenges.
2. Behavioral change related to food consumption and live styles, partly resulting in the obesity and related health consequences.
3. The transformative roles of food and nutrition sciences, and food systems with new value chains, an increased role of processed food, supermarkets, integrate the food system ever more with the larger international economy in terms of labor markets, energy markets, and services, i.e. finance, and commodity markets and foreign direct investment.
4. The environmental aspects of agriculture and the increased scarcities of natural resources, i.e. water systems, fertile soils, biodiversity; and the huge risks of climate change, all with science challenges of growing complexities.
5. The protracted food and nutrition insecurity in about 400 million small farm households, which form the world's largest group of the hungry and malnourished, requires social science attention in conjunction with other sciences.

Obviously, these drivers of FN change are interlinked. Recognizing that science has a significant role to play for international economic development is an important first step toward results oriented science policy for food and nutrition security. Investment in science systems is part of any successful development policy. The science community today must rise to the challenge to connect to the debate on human and sustainable development goals. Some initiatives have been taken recently, such as Sustainable Development Science Network (SDSN), Green Growth Knowledge Platform (GGKN), and the emerging international network on Bioeconomy. Moreover, in the past two decades, information and communications technologies (ICTs) reduced transactions costs and improved the networking intensity in the international science systems, including with emerging economies. This will also facilitate more virtual approaches toward an international Panel on food and nutrition security, rather than any excessive meeting intensive arrangement.

## 5 A science based assessment mechanism for food and nutrition security: three options

The current and future challenges of food and nutrition security require a strong mechanism for science based assessment as a permanent institutional arrangement. An international arrangement tasked with this could be partly inspired by the Intergovernmental Panel on Climate Change (IPCC). While its medium-term focus for the coming two decades should relate to the SDGs to end hunger by 2030, it must have a long-term perspective on food and nutrition related risks and challenges beyond 2030.

An international arrangement that facilitates the peer reviewed assessments on food and nutrition security is needed for delivering evidence based analyses for action with foresight. This function goes far beyond any of the existing science advisory bodies for policy at national or international levels. The whole international science system related to food and nutrition security and agriculture needs to be tapped into for the purpose.

As both, the science system and the policy systems of FN sketched above, are complex and multi-layered, any choice of options for design of mechanisms for improved international science – policy interaction need to carefully consider a set of criteria such as

1. Contribution to improve the informed decision making process on food and nutrition security effectively and efficiently, in comparison with business as usual,
2. Political and organizational feasibility of action for implementation on both sides and jointly, the science component and the political / organizational component of an International Panel type mechanism,
3. Costs of implementation and of management of mechanisms, including transaction costs for coordination and exchange (Williamson 1981)

Each of the three options considered below have their plusses and minuses in relation to each of these criteria. Table 2 summarizes the evaluation of the different options which differ in the degree of coordination within the science bodies and between the academic and political domain. While option 1 represents business-as-usual, implementation of option 3 would be based on design principles of the IPCC. Option 2 would imply less political linkages while option 3 requires embedding in the UN system. Below, the options are explained in more detail.

### Option 1: Working with the current and emerging system

- Perspective: Reliance on established and evolving science – policy interactions with further marginal refinements (e.g. Dicks et al. 2014). Hope that global integration and enhanced science capacities in FN in middle income countries may facilitate some gradual improvement of science based actions that may improve international actions in FN.
- Limitations: Demand by FN policy for evidence based FN insights and science systems' supply of such insights may remain at a low level. International organizations and political bodies may continue to focus on defined subsets of FN agendas and synergies potentials and attention to trans-sectoral nexus issues between nutrition, health, sanitation, food and agriculture will hardly be captured. Lack of legitimacy for evaluating policy options that involve normative judgements.
- Potential contribution to enhance the achievement of the FN related SDG effectively and efficiently: limited potential;

- Political and organizational feasibility on both sides, the science component and the political / organizational component of an International Panel type mechanism: not only feasible but likely, as political costs of a no-action option are low in the short term.
- Costs, including transactions costs, of implementation and of management of mechanisms: no cost of implementation; continued high transactions costs of uncoordinated and duplicated science – policy interactions in multiple organizational settings.
- Implementation action: no action needed.

Table 2. Assessment of the different options for science-policy interaction

	Potential benefits	Transaction costs	Feasibility	Best suitable for
<b>Option 1: Business as usual (Working with the current and emerging system)</b>	Fast and ad-hoc small-scale assessments or reviews possible but limited potential for large-scale issues	No additional up-front costs;  Redundancies and gaps due to lack of coordination remain	High (business-as-usual)	Problems of limited disciplinary or regional scope, involving little controversies
<b>Option 2: Establishment of an <i>International Panel on Food and Nutrition Security</i> (Science in the lead)</b>	Better coordination and academic dispute settling than option 1.  Global mobilization of science for FN. New problem solving research is triggered.	Lower coordination costs than option 3 (governments and International Organizations are invited and comment on findings, but no veto possible)	High political feasibility.  Participation of scientists due to ISI listed publications, strengthened networks among scientists.	Issues where decision-making depends on comprehensive science base but not necessarily on consensus
<b>Option 3: Establishment of an <i>Inter-governmental Panel on Food and Nutrition Security</i> (Governments and international organizations in conjunction with science bodies in the lead)</b>	Increased legitimacy and credibility for controversial issues due to mandate by international community.  Clarity on peer review of existing research (no new research).  Enforced coordination among science and policy.	High transaction costs (time spent by researchers) due to broad participation, transparency rules and formal approval by governments.	Requires strong leadership and commitment of international institutions and governments.  Participation of scientists based on reputation and policy impact.	Problems where consensus is necessary for decision-making (UN system)

## **Option 2: Establishment of an International Panel on Food and Nutrition Security (Science in the lead)**

- Perspective: Not following the IPCC approach and design. Establishment of a standing mechanism for science and policy related to FN to assess the state of scientific evidence on a set of well-defined FN policy challenges. Strong peer review based assessments. Policy bodies and civil society would be invited to comment on assessments that also reflect controversies (no need for consensus reports). Would bring FN science communities world-wide together with some focus. Evidence base around controversial FN issues would be openly stated, no principle to reach consensus needed, but identification for needed science on controversial issues.
- Limitations: Governments and international organizations would pick and choose as fit their circumstances and priorities. Civil society and media might engage more for identified opportunities and for avoidance of emerging risks related to progress in the SDG on end hunger. Assessments could become less policy-relevant if only conducted by scientists without strong and bi-directional exchange mechanism with policy makers (Briggs and Knight 2011, Roux et al. 2006)
- Potential contribution to enhance the achievement of the FN related SDG effectively and efficiently: some potential;
- Political and organizational feasibility on both sides, the science component and the political / organizational component of an International Panel type mechanism: feasible if proper incentive systems would be created for the global science communities related to FN to actually participate (reputation, funding). Political costs of the option are low. Private sector and NGOs might support the process if they *expect to influence* assessment
- Costs, including transactions costs, of implementation and of management of mechanisms: direct costs for meetings of the plenary, bureau, expert panels (\$1.5-\$2.0 mln.) and for secretariat (\$2.1 mln)<sup>1</sup> plus indirect costs for working time of authors and reviewers plus additional implementation costs for specific objectives; reduced transactions costs due to less uncoordinated and duplicated science on specified themes.
- Implementation action: Starting the mechanism on the science side; political side is actively observing. Selected UN Agencies (possibly WHO and FAO) share observer roles and provide feedback to the science forum's assessments. National Governments are also serving as observers of the assessments and provide feedback.

## **Option 3: Establishment of an Intergovernmental Panel on Food and Nutrition Security (Governments and international organizations together with science bodies in the lead)**

- Perspective: Basically following the IPCC design and approach. Establishment of a standing forum for science and policy related to FN to assess the state of scientific evidence on a set of well-defined FN policy challenges. Strong peer selection governs the peer-review based assessments. Formal interaction to conclude assessments with policy bodies. Would bring FN science and policy communities world-wide together with a clear focus on solutions for FN Security.

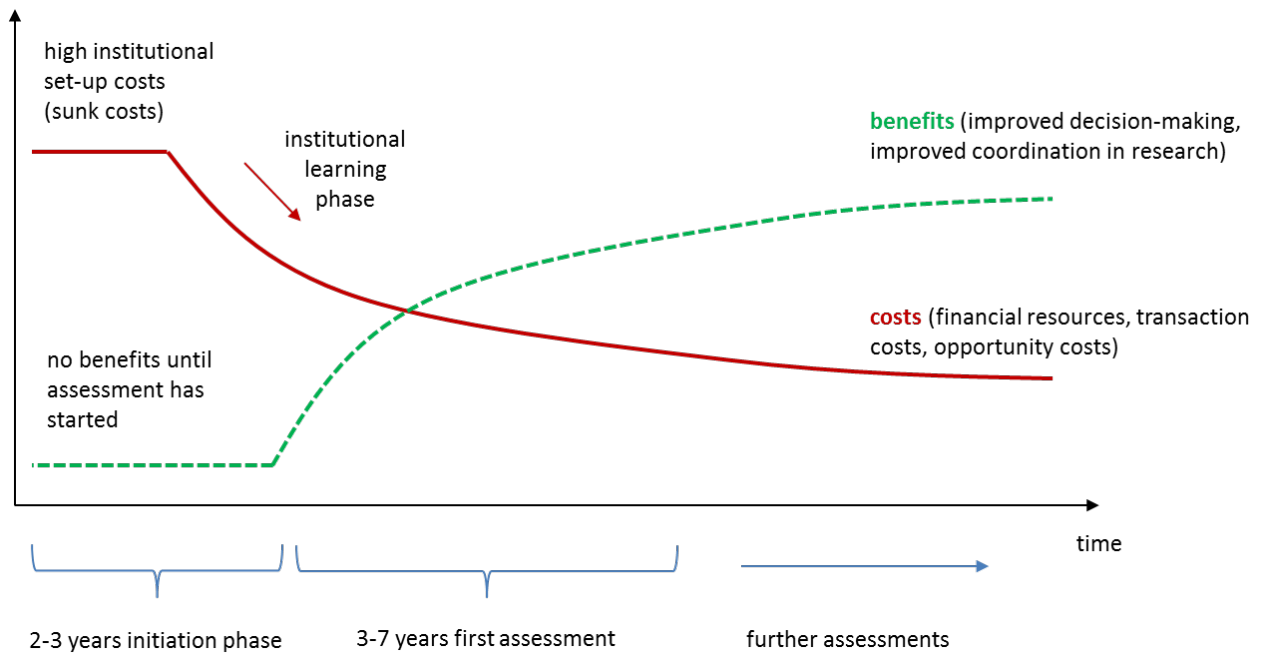
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<sup>1</sup> Costs based on budget positions in the budget and expenditure arrangements of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES/3/10 [http://ipbes.net/images/documents/plenary/third/working/3\\_10/IPBES\\_3\\_10\\_EN.pdf](http://ipbes.net/images/documents/plenary/third/working/3_10/IPBES_3_10_EN.pdf) ).

- Limitations: taking more time to establish such mechanism and assessment processes are also slower than on informal basis, even after governments and international organizations might agree on it. Because more policy driven in terms of themes, civil society and media would engage much more for identified opportunities and for avoidance of emerging risks related to progress in the SDG on end hunger and improved nutrition.
- Potential contribution to enhance the achievement of the FN related SDG effectively and efficiently: significant potential; also potential to overcome controversies that paralyze decision-making.
- Political and organizational feasibility on both sides, the science component and the political / organizational component of an International Panel type mechanism: political feasibility may be constrained by international organizations' turf interests. Political organizations such as G20 with EU could play a catalytic role for initiation (EU experience with JPIs on food security and on nutrition, etc.). Some private sector and NGOs might oppose the process because of formal rules based on scientific principles; other might support the process (depending on their *expectations on the outcome* of the assessments). Scientists willing to contribute if demanded by international community, academic quality is good and report has impact.
- Costs, including transactions costs, of implementation and of management of mechanisms: cost of similar to option 2 plus indirect costs of political coordination (full plenary UN-type meetings, additional coordination requirements within national governments & ministries); rigorous transparency and review rules increase time and burden researchers have to spend for contributing to assessments. Much reduced transactions costs due to less uncoordinated and duplicated science on specified themes.
- Implementation action: Starting the mechanism simultaneously on the science and political side. Selected UN Agencies (possibly WHO and FAO) share lead roles. Feedback to the science body's findings are encouraged beyond government by civil society. To enhance knowledge transfer, a first assessment report by IPFN could include climate-change related FNS topics with some former authors / co-chairs of IPCC reports to benefit from their experience.

Any such initiative as outlined for options 2 and 3 need to be assessed from both, a cost and benefits perspective. These options involve the establishment of a new institutional framework which is associated with set-up-costs and delayed benefits' streams. One has to prepare for initial run-up challenges in coordination that will be overcome through time due to institutional learning and improvement. The benefits of option 2 and 3 manifest themselves only after first assessments have been conducted. As illustrated in Figure 1, the benefits are long-term while the costs are significant in the short-term. The political commitment for option 2 or 3 should therefore explicitly take into account the delayed benefits while the major efforts occur in the short-run. Option 3 may increase the wedge between short-term costs and long-term benefits further due to formalized decision-making procedures in the UN context. Furthermore, the consent-oriented approval mechanism by policy makers in the IPCC (option 3) proved difficult for evaluating policies by scientists (Edenhofer and Minx 2014). The evaluation of (past) policies is, however, crucial to improve future policies.

Figure 1. Dynamic cost and benefit structure of an International Panel on Food and Nutrition



Source: Own illustration.

The institutional design for implementing a Panel on FN is inspired by the IPCC.

Table 3 illustrates the major design option of the proposed IPFN (options 2 and 3) compared to the existing IPCC.

Table 3. Institutional design options for assessment reports (with the IPCC as bench mark model)

Institutional principles / elements	IPFN (options 2 or 3)	IPCC
<b>Organizational body</b>		
<b>Acronym</b>	International or Intergovernmental Panel on Food and Nutrition (IPFN)	Intergovernmental Panel on Climate Change (IPCC)
<b>Aim</b>	<p>Provide guidance for ending hunger and for promoting sustained food and nutrition security (SDG2 and beyond)</p> <ul style="list-style-type: none"> <li>• Measurement of hunger, food security, progress</li> <li>• Future scenarios of supply, demand, risks</li> <li>• Policy options at multiple scales (international/national/local; public-private)</li> </ul>	<p>Assess scientific knowledge in climate change with environmental and socio-economic impacts, inter alia:</p> <ul style="list-style-type: none"> <li>• Measurement of greenhouse gas emissions / concentration</li> <li>• Scenarios</li> <li>• Assessment of impacts, risks, uncertainties</li> <li>• Options for policy makers</li> </ul>
<b>Formal role in political decision making</b>	Provide science based information to national, regional and international bodies on means to achieve SDG2 in the context of related goals.	Provide science bases for UNFCCC process and negotiations
<b>Science-policy approach</b>	<p>Motto: “policy relevant but not prescriptive”; provide neutral and comprehensive science basis for decision makers</p> <p>IPFN does stimulate to conduct also new research to resolve or reduce controversies</p>	<p>Motto: “policy relevant but not prescriptive”; provide neutral and comprehensive science basis for decision makers</p> <p>IPCC does not conduct research – only assessment and harmonization</p>
<b>Institutional embedding</b>	<p>Option2: politically independent: Network of Academies of Sciences</p> <p>Option 3: FAO, WHO (Rome, Geneva)</p>	World Meteorological Organization (WMO), Geneva
<b>Membership</b>	<p>Option 2: science arrangements drive the system</p> <p>Option 3 Governments and FAO, WHO, WFP, IFAD, UNDP and UN countries</p>	All WMO and UN countries can participate
<b>Operational issues</b>	Secretariat Rome, or Geneva, or Brussels	Secretariat at WMO coordinates meetings, issues documents etc.
<b>Budget and funding</b>	<ul style="list-style-type: none"> <li>• Funding as part of OECD’s commitments to ODA</li> <li>• Voluntary contributions from member countries</li> <li>• Trust Fund for supporting participation of developing countries’ experts and publication and translation of reports</li> <li>• In-kind support by governments by hosting ‘Technical Support Units’ and</li> </ul>	<ul style="list-style-type: none"> <li>• Regular funding from WMO and UNEP (also some staff for secretariat hosted at WMO)</li> <li>• Voluntary contributions from member countries</li> <li>• IPCC Trust Fund for supporting participation of developing countries’ experts and publication and translation of reports</li> </ul>

	hosting meetings  Authors and reviewers do not receive remuneration	<ul style="list-style-type: none"> <li>In-kind support by governments by hosting 'Technical Support Units' and hosting meetings</li> </ul> Authors and reviewers do not receive remuneration
<b>Decision making process</b>	<p>Option 2: Decisions (incl. approving reports) by science criteria</p> <p>Option 3: Decisions (incl. approving reports) shall be by consensus. Decision making by 'qualified majority' rule</p>	Strong role of consensus principle. Procedural issues are to be decided according to general WMO regulations. Differences in views should be documented.
<b>Assessment reports</b>		
<b>Participation in assessment (report writing)</b>	<p><b>Authors</b> by invitation of Lead Authors, <b>Lead Authors</b> by selection of IPFN Bureau</p> <p><b>Reviewers:</b> anybody qualified can become reviewer</p>	<p><b>Authors</b> by invitation of Lead Authors, <b>Lead Authors</b> by selection of IPCC Bureau</p> <p><b>Reviewers:</b> anybody can become reviewer</p>
<b>Internal structure for assessments</b>	<p>Institutional architecture to involve all relevant disciplines</p> <p>Formation of thematic work teams</p>	Three working groups: (1) Physical Science Base, (2) Impacts & Adaptation, (3) Mitigation.
<b>Assessment reports</b>	<p><b>1: Assessment Reports:</b> Conduct regular reports every 5 years on the state of food security <i>research</i> (focus has to be on academic advances and deficits – not on description of developments)</p> <p><b>2: Special reports</b> with narrow scope; possible topics: Future scenarios and risks Nutrition interventions (micronutrients) Drivers of obesity Technologies and Innovations (potential, risks, regulation) Land use and land ownership (incl. land investments)</p> <p><b>3: Methodological reports</b>, e.g. on measuring FN (guidance for practitioners, governments, applied researchers)</p> <p><b>4. Policy briefs</b> for political bodies (with a structured process for commenting by them)</p>	<p><b>1. Assessment reports:</b> full scientific and technical assessment of climate change; report by each of the three working groups; summary for policy makers</p> <p><b>2. Special reports:</b> (usually conducted by one working group), e.g. Technology Transfer (2000); Carbon Dioxide and Storage (2005); Renewable Energy (2011); Extreme Events (2012)</p> <p><b>3. Methodological reports:</b> materials that provide practical guidelines for the preparation of greenhouse gas inventories, incl. uncertainty management</p>
<b>Personnel (management)</b>	<b>IPFN Bureau consists of the Chair and vice-chairs</b> (steering committee) elected by IPFN plenary for operational decisions; advisory board elected by plenary as control institution	<b>IPCC Bureau consists of the Co-Chairs and Vice-Chairs;</b> elected by IPCC panel, by majority rule; nominee shall have appropriate scientific qualification
<b>Process of report-</b>	1. Scoping meeting to develop outline	1. Scoping meeting to develop



<b>writing (drafts, review, approval)</b>	<p>of the report</p> <ol style="list-style-type: none"> <li>2. Selection of authors</li> <li>3. 1<sup>st</sup> order draft; then expert review</li> <li>4. 2<sup>nd</sup> order draft and draft of SPM; expert <i>and</i> government review</li> <li>5. Publication of report and SPM</li> </ol> <p>Option 2: Governments are invited to review and comment but no approval function;</p> <p>Option 3: acceptance / approval by IPFN Plenary</p>	<p>outline of the report</p> <ol style="list-style-type: none"> <li>2. Bureau selects authors based on nominations</li> <li>3. 1<sup>st</sup> order draft; then expert review</li> <li>4. 2<sup>nd</sup> order draft and draft of SPM; expert <i>and</i> government review</li> <li>5. Final draft of report and SPM; then government review</li> <li>6. Acceptance / approval by IPCC Plenary</li> </ol>
<b>Review procedure</b>	Review Editors have to ensure that all review comments are addressed by the authors. All comments are archived.	Review Editors have to ensure that all review comments are addressed by the authors. All comments are archived.
<b>Summary for policy-makers (SPM)</b>	<p>Option 2: Is written by Co-Chairs in consultation with the Lead Authors of the Chapters.</p> <p>Option 3: Is written by Co-Chairs of the Working Group; Govt's approve SPM line-by-line (and can demand changes)</p>	Is written by Co-Chairs of the Working Group; Govt's approve SPM line-by-line (and can demand changes)
<b>Acceptance / Approval</b>	<p>Option 3 only:</p> <p>Acceptance [= report provides comprehensive, objective and balanced view] of the whole report by the IPFN</p> <p>Approval [=line-by-line agreement] of SPM</p>	<p><b>Acceptance</b> [= report provides comprehensive, objective and balanced view] of the whole report by the IPCC</p> <p><b>Approval</b> [=line-by-line agreement] of SPM</p>
<b>Conflict of interest policy</b>	Same as IPCC	Rigid transparency guidelines following rules of the InterAcademy Council

Source: Own elaborations based on IPCC documentation

([http://www.ipcc.ch/organization/organization\\_structure.shtml](http://www.ipcc.ch/organization/organization_structure.shtml) and

[http://www.ipcc.ch/organization/organization\\_procedures.shtml](http://www.ipcc.ch/organization/organization_procedures.shtml), last accessed 16 Sep 2015)

## 6 Conclusions: toward action

The food and nutrition security issues loom large and need action. Science needs to play a key role to offer global and context specific local solutions. If steps in the direction of improved science – policy interaction are not taken, incoherent and uncoordinated actions for food and nutrition security, often lacking scientific evidence base, will continue to hamper needed progress toward a world to “end hunger, achieve food security and improved nutrition and promote sustainable agriculture” (SDG 2).

The IPCC can serve as a useful role model and reference point, but its strong emphasis on consensus is owed to the global public good characteristic of the climate problem which requires strongly coordinated decision making within the UN system. Food and nutrition, though being a global issue, provides much more scope for local, national and sectoral decision making. The need for a comprehensive science base and an objective science-policy dialogue as well as improved coordination to close research gaps is at the moment more important than to achieve consensus in all areas. Considering the political and administrative (transactions) costs of the options 2 and 3, an Intergovernmental Panel on Food and Nutrition Security (option 3) is a long term scenario at best. Rather option 2 should be pursued to begin with, and option 3 might be considered in the longer term future.

Coming to a meaningful implementation of the option 2 will require science policy leadership. Leadership for change could come from the science community. Political and some financial support would be needed by the UN and the G20. EU is with its research infrastructure well placed to play the essential catalytic role to further develop the proposed initiative (Soussana et al. 2012). For a policy-relevant assessment, it will be crucial to establish stakes for the policy domain in assessment processes without compromising the scientific neutrality of the process.

To move the process forward toward option 2 initially may need a high-level, broad based, legitimized time-bound dialogue forum that embraces the whole set of FN challenges, and addresses the organizational implications.

Following political decisions based on a comprehensive implementation plan, the setup of the system could be done step by step, managed by a small task force supported by a secretariat.

## 7 Acknowledgment

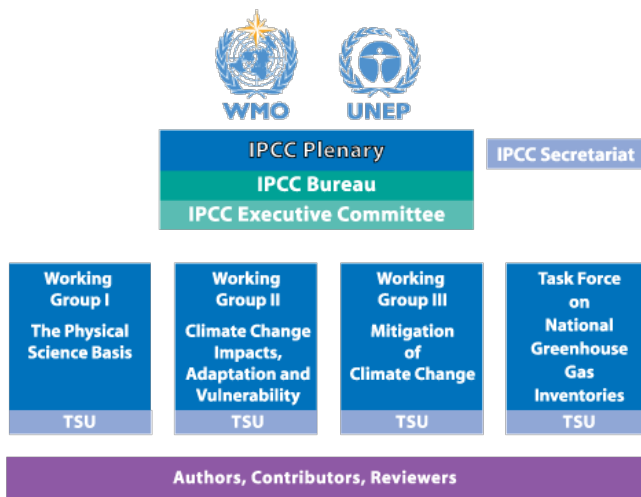
This concept paper benefited from discussions with Ottmar Edenhofer, Co-Chair of the IPCC's Working Group on Mitigation, and Martin Kowarsch, head of the [working group Scientific Assessments, Ethics, and Public Policy at the Mercator Research Institute on Global Commons and Climate Change, Berlin](#). The views expressed in this paper are of the authors.

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## Annex 1: How the Intergovernmental Panel on Climate Change (IPCC) works:

- Scientists contribute on a voluntary basis
- The Panel takes major decisions at Plenary Sessions of government representatives.
- A central IPCC Secretariat supports the work of the IPCC.
- IPCC has 195 members
- Panel meets once per year
- Each IPC member has a focal point
  - Focal points prepare and update the list of national experts
- The IPCC is currently organized in **3 Working Groups and a Task Force**.
  - They are assisted by Technical Support Units (TSUs), which are hosted and financially supported by the government of the developed country Co-Chair of that Working Group/Task Force.
  - A TSU may also be established to support the IPCC Chair in preparing the Synthesis Report for an assessment report.
  - **Working Group I** deals with "The Physical Science Basis of Climate Change"
  - **Working Group II** with "Climate Change Impacts, Adaptation and Vulnerability"
  - **Working Group III** with "Mitigation of Climate Change".
  - Working Groups meet in plenary session at the level of government representatives.
  - The **main objective** of the Task Force on National Greenhouse Gas Inventories is to develop and refine a methodology for the calculation and reporting of national greenhouse gas emissions and removals.
- Besides the Working Groups and Task Force, further Task Groups and Steering Groups may be established for a limited or longer duration to consider a specific topic or question. One example is the Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA).
- **Decisions** during the plenary sessions include:
  - Election of IPCC Chair, IPCC Bureau, Task Force Bureau
  - Structure, mandate of the working groups and task force
  - IPCC principles and procedures
  - Work plan of the IPCC
  - Budget
  - Scope and outline of the IPCC reports
  - Approval, adoption and acceptance of reports



Based on: [http://www.ipcc.ch/organization/organization\\_structure.shtml](http://www.ipcc.ch/organization/organization_structure.shtml)

## Annex 2: The expected SDGs and the SDG2

### The expected SDGs

- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5. Achieve gender equality and empower all women and girls
- Goal 6. Ensure availability and sustainable management of water and sanitation for all
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. Reduce inequality within and among countries
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. Ensure sustainable consumption and production patterns
- Goal 13. Take urgent action to combat climate change and its impacts\*
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source: <https://sustainabledevelopment.un.org/content/documents/4523zerodraft.pdf>

Specifically the Goal to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture” entails a set of targets emphasizing access to nutritious and sufficient food, and end of all forms of malnutrition, as expressed by stunting and wasting of children, etc. (see Box on targets below).

### Targets for the Goal 2 to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”

- 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
  - 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
  - 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
  - 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
  - 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
  - 2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
  - 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
  - 2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility
- The 2009 Declaration of the World Summit on Food Security defines the concept of food security as “Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension is integral to the concept of food security” (FAO 2009, p.1). FAO further states, that based on this definition, “...four food security dimensions can be identified: food availability, economic and physical access to food, food utilization and stability (vulnerability and shocks) over time” FAO 2013, p. 17). Each food security dimension is described by specific indicators by FAO (2013).

Source: <https://sustainabledevelopment.un.org/content/documents/4523zerodraft.pdf>

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Photo: ZEF

Published by:  
Zentrum für Entwicklungsforschung (ZEF)  
Center for Development Research  
Walter-Flex-Straße 3  
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Germany  
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