# Fund Council

**12th Meeting (FC12)—Brussels, Belgium**
**November 4-5, 2014**

## *WORKING DOCUMENT*

*Humidtropics' Extension Proposal 2015 - 2016*

*Submitted by:*
*CRP Humidtropics*

RESEARCH PROGRAM ON Integrated Systems for the Humid Tropics

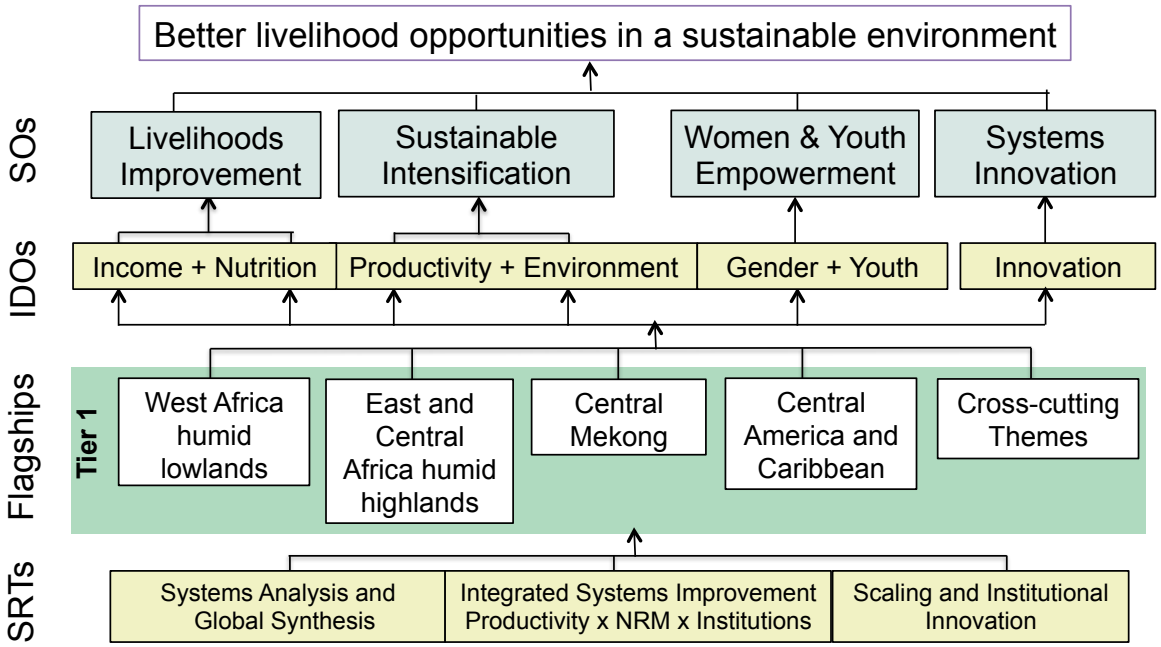
CGIAR

# Humidtropics' Extension Proposal 2015 - 2016

## 1. Intermediate Development Outcomes, Theories of Change, and Impact Pathways

Humidtropics is one of three systems research programs among the 15 CRPs of the CGIAR consortium. The program was launched in July 2012, with the goal of improving overall agricultural productivity in a sustainable manner, and transforming the lives of the rural poor in the humid tropics. **Sustainable intensification** is an over-riding theme in this respect. Research in Humidtropics has been restructured into a new programmatic framework during 2013 (Figure 1) to reflect five **Flagship Projects**, aiming to deliver on six **Intermediate Development Outcomes** (IDOs). The first 3-year phase of the program was due to end in June 2015. A decision has however been made by the CGIAR, for all CRPs to seek extension of this first phase up to the end of 2016. Consequently, this extension proposal (2015-2016) has been developed to enable full implementation of Humidtropics towards attainment of its set IDOs and CGIAR System Level Outcomes (SLOs), and to better position the CRP towards smooth transition into phase 2, scheduled to begin January 2017.

**Figure 1: Programmatic Framework 2013**




### A. Intermediate Development Outcomes

The IDOs of Humidtropics derive directly from its four Strategic Objectives (SOs) of (i) Livelihoods Improvement, (ii) Sustainable Intensification, (iii) Women and Youth Empowerment, and (iv) Systems Innovation. Each SO relates directly to one or two IDOs; and for each IDO, indicators with targets to be reached by 2027 are defined. These IDOs will thus continue through the extension period and into the second CRP phase. The IDOs and their indicative targets for impact are indicated below, under the respective SOs, and further detailed in Table 1.

**Livelihoods Improvement** addresses the issue of improved livelihoods in terms of income and nutrition for rural farm families, and the directly related IDOs concern Income and Nutrition.

- *IDO Income* focuses on increased and more equitable income as a result of Humidtropics system interventions, earned by smallholders in the value chain. Progress will be tracked by gender and age with a focus on improving the incomes of marginal populations.

- *IDO Nutrition* monitors the increased consumption of diversified and quality foods by the poor, especially among nutritionally vulnerable women and children. This IDO will be accomplished through research for the diversification of high quality crops and livestock leading to enhanced consumption of diverse nutritious foods by the poor.

**Sustainable Intensification** concerns increased total farm productivity while respecting natural resources integrity. This is a central and over-riding theme with contributions and implications for the other IDOs. It is linked to IDOs on Productivity and Environment.

- *IDO Productivity* focuses on the total farm-level productivity (food, feed, fibre, livestock products), through sustainable intensification and diversification. The overall aim is to optimize the returns from the farm, while respecting the natural resource integrity.
- *IDO Environment* concerns reversing land degradation trends and the adverse environmental effects of integrated systems intensification by guiding the transition to sustainable management. This IDO focuses on the ability of the land to remain productive for present and future generations through the conservation and management of biodiversity, soil fertility and ecosystem services.

**Gender Empowerment** concerns empowering women and youth with better control over, and benefit from integrated production systems, and it is directly linked with the IDO on Gender.

- *IDO Gender* focuses on empowering women to have better control over and benefit from integrated production and marketing systems through specific interventions, and ultimately to transform women's status and position. The IDO also addresses youth and marginalized groups' empowerment as an essential component to ensure their improved access to and control over the benefits from integrated systems interventions.

**Systems Innovation** addresses the issue of enhanced capacity for systems innovation and corresponds to the IDO on Innovation (Capacity to Innovate).

- *IDO Capacity to Innovate* is an enabling IDO supporting systems interventions towards achievement of impact at scale. It involves building innovation capacity among the actors within a defined agro-ecological and livelihood system, and facilitating and guiding innovation processes by influencing the socio-technical regimes at work in the various impact domains. The IDO also aims to shift discourse of actors operating at the socio-technical regime level, in support of systems thinking and innovation.

**Table 1: Intermediate Development Indicators with 3, 6 and 9-year targets with data needs**

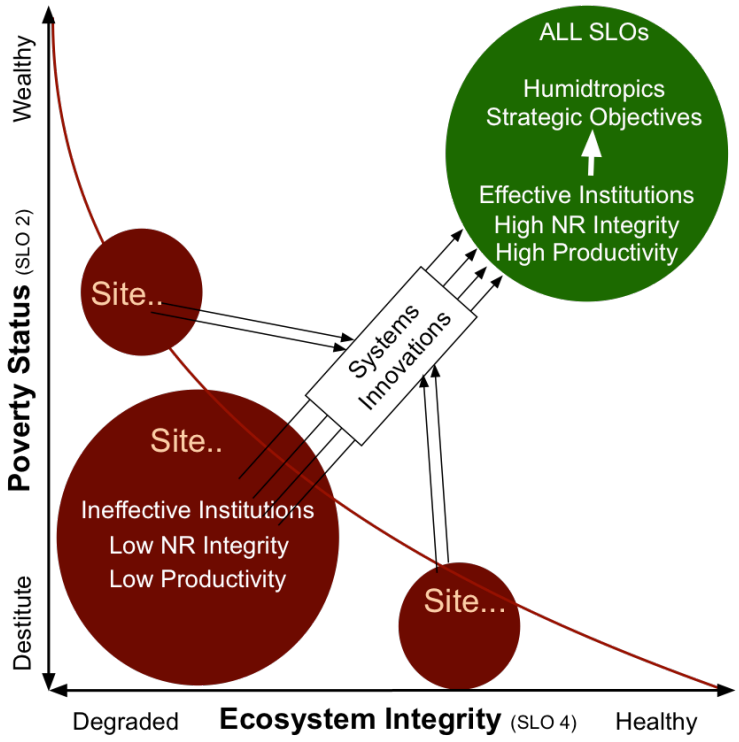
| Indicator | Targets | Data needs |
|---|---|---|
| **IDO Income: Increased and more equitable income as a result of Humidtropics system interventions, earned by rural poor farm families, with special focus on rural women** | | |
| 1.1 Total annual household income and distribution disaggregated by household members along gender and age. *[Average USD equivalent per household]* | By 2023, at least 2.5 million households will have increased their income by 44% (200,000 households by 2017; 1 million by 2020) | Overall household income data expressed in USD equivalent, disaggregated by household members |
| **IDO Nutrition: Increased consumption of diversified and quality foods by the poor, especially among nutritionally vulnerable women and children** | | |
| 2.1 The number of children (6-23 months) who receive foods from 4 or more food groups out of a set of 7 standardized food groups during the previous day *[number of food groups]* | By 2023, within at least 1 million households, children of 6-23 months consume at least 4 food groups (2,000 households by 2017; 200,000 households by 2020) | A representative sample of women in the Field and Action Sites and Action Areas are asked to recall what their child 6-23 months of age consumed the previous day |
| 2.2 The number of women of reproductive age (15-49yrs) who have increased their dietary diversity out of a set of 9 standardized food groups during the previous day *[number of food groups]* | By 2023, within at least 1 million households, women of 15-49 years consume a larger number of food groups (2,000 households by 2017; 200,000 households by 2020) | A representative sample of women in the Field and Action Sites and Action Areas are asked to recall what they consumed the previous day |

| | | |
|---|---|---|
| **IDO Productivity: Increased total farm-level productivity in smallholder production systems** | | |
| 3.1 Total annual farm-level productivity (food, feed, fibre, livestock products) *[USD equivalent per farm per year]* | By 2023, within at least 2.5 million households, farm-level productivity is increased by 60% (200,000 households by 2017; 1 million households by 2020) | Measurements of the productivity of all production units for a representative sample of households, supported by satellite imagery; the USD values will be derived from current prices (before Humidtropics value added interventions) |
| **IDO Environment: Minimized adverse environmental effects of increased system production** | | |
| 4.1 Partial annual C and nutrient balances at farm level *[kg per farm per year]* | By 2023, within at least 2.2 million ha of farm land, nutrient and C balances become positive (150,000 ha by 2017; 800,000 ha by 2020) | Resource flow maps are drawn for a representative sample of farms to identify farmers' soil management strategies with quantification of all carbon and nutrient inputs and outputs at farm level followed by modeling to substantiate the IDO outcome |
| 4.2 Woody cover on-farm through assessment of perennial and semi-perennial plant component *[% woody cover per farm]* | By 2023, on at least 2.5 million farms, negative trends in woody cover are reversed (200,000 farms by 2017; 1 million farms by 2020) | Assessment of woody cover using the T-square method for a representative sample of farms |
| **IDO Gender: Increased control over resources and participation in decision-making by women and other marginalized groups** | | |
| 5.1 Improved women empowerment *[access to assets]* | By 2023, within at least 250,000 households, women have increased their access to assets by 35% (20,000 households by 2017; 100,000 by 2020). | Number of women who perceive to have better control over assets and increased decision making capacity |
| 5.2 Improved empowerment of youth and marginalized groups *[access to assets]* | By 2023, within at least 250,000 households, youth have increased their access to assets by 50% (20,000 households by 2017; 100,000 by 2020) | Number of young people who perceive to have better control over assets and increased decision making capacity |
| **IDO Capacity to Innovate: Improved capacity to innovate integrated systems by actors at household, institutional and landscape levels** | | |
| 6.1 Capacity of systems actors to identify and prioritize systems problems and opportunities improved | By 2023, systems innovation coalitions such as R4D Platforms in all Action Sites independently continue to identify and prioritize systems problems (at least 2 coalitions per Action Area by 2017; at least 1 coalition per Action Site by 2020) | Number of operational systems innovation coalitions such as R4D Platforms that defined and prioritized systems problems and opportunities for systems intervention research |
| 6.2 Capacity of systems actors to invest, test and experiment with tradeoffs between alternative intervention options improved | By 2023, systems innovation coalitions independently continue to experiment with alternative interventions options (at least 2 coalitions per Action Area by 2017; at least 1 coalition per Action Site by 2020) | Number of intervention options experimented with and number of best-fit innovations generated through R4D and other innovation coalitions |
| 6.3 Capacity of systems actors to learn and share their knowledge improved | By 2023, systems actors at all levels are engaged in systems innovation coalitions, share their knowledge and learn from other experiences with other Action Sites, and scale to other Action Areas (at least 1 coalition per Action Area by 2017; at least 1 coalition per Action Site by 2020) | Number of innovations shared with systems actors at all levels in Action Sites, Action Areas and new geographical locations |

## B. Theory of Change

Integrated systems are complex, dynamic and vary from location to location. The Theory of Change of Humidtropics is based on the hypothesis that the region's inherent potential is best realized through an integrated systems approach, **built around sustainable intensification and diversification,** involving participatory action across stakeholder groups. Humidtropics addresses this by enhancing the capacity to innovate at farm, institutional and landscape levels thus contributing to delivering on the four SLOs. Innovation Platforms and other change coalitions help to identify and prioritize systems problems and opportunities, supported by systems analysis, to identify entry points that require social and technical innovations. This is demonstrated in the Humidtropics overarching Theory of Change (Figure 2).

**Figure 2: Humidtropics overarching Theory of Change**




The Theory of Change takes its starting point in a baseline situation, characterized by a certain combination of poverty status and ecosystem integrity, related to productivity, natural resources integrity and institutional effectiveness. Different research sites of Humidtropics could be mapped onto specific locations (red circles) on the poverty/ecosystem integrity nexus. Systems interventions and innovation (in green) need to be developed and introduced at the sites in order to transform their respective baseline situations to the idealized position (white circle). This desired position is characterized by high productivity, high natural resources integrity and effective institutions; thus providing better standard of living for smallholder farmers, and enhanced sustainability within the production system.

In realization of this Theory of Change, Humidtropics has three main Strategic Research Themes (SRTs) that underpin the research process that will continue during 2015-2016 and increasingly integrate into the Flagship Project's functioning:

- *Systems Analysis and Synthesis* establishes the baseline situation and synthesizes progress towards the expected outcome situation.
- *Integrated Systems Improvement* involves researching and mainstreaming promising systems interventions related to productivity, natural resource management, and markets and institutions. This theme also includes use of modelling tools and analysis, gender considerations, research-

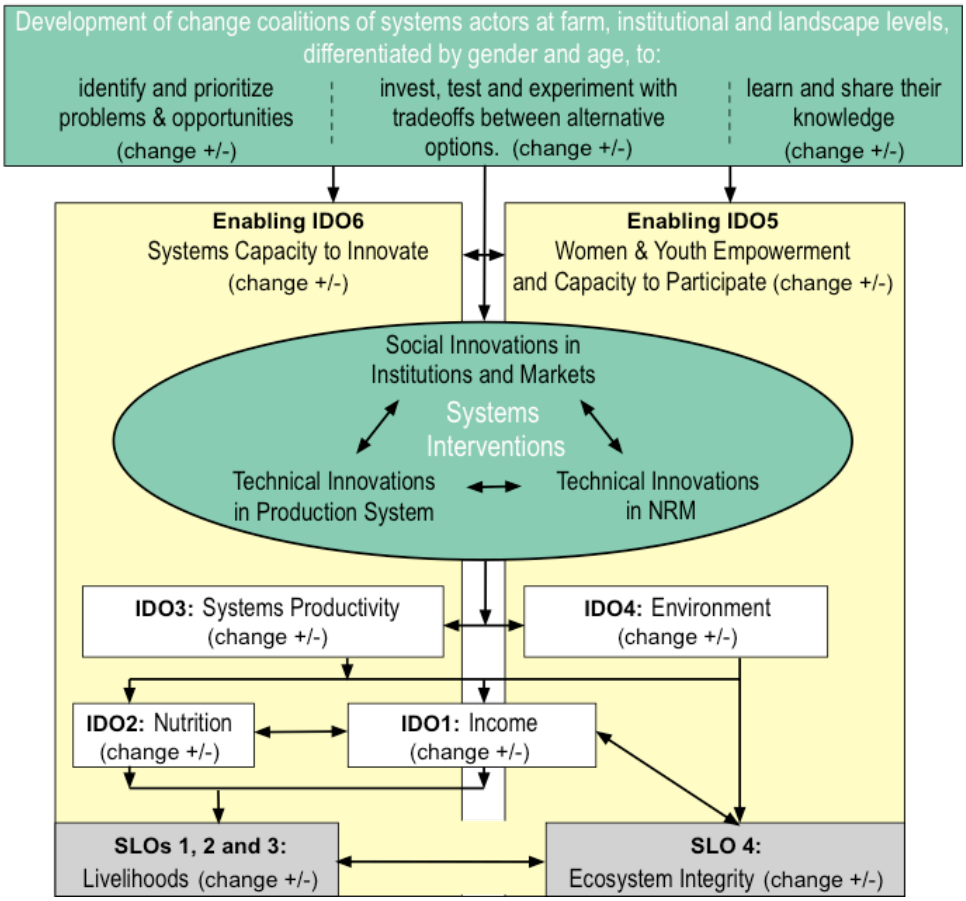
development interactions, and scaling-out dimensions. Sustainable intensification and diversification are key drivers in this respect.

- *Scaling and Institutional Innovation* focuses on co-evolving institutions via social innovation with the technologies emanating from the integrated systems improvement theme. As such it improves stakeholders' capacity to innovate and supports the scaling of interventions at farm, national and global levels.

## C. Impact Pathways

Integrated systems research embraces the complexity of the system. Its multiple intervention pathways display trade-offs and synergies between competing use of resources and benefits based on different entry points and priorities. The program uses an overarching Impact Pathway incorporating all IDOs (Figure 3). The overarching Impact Pathway is the basis for more detailed Impact Pathways that result from priorities and entry points established for each research location.

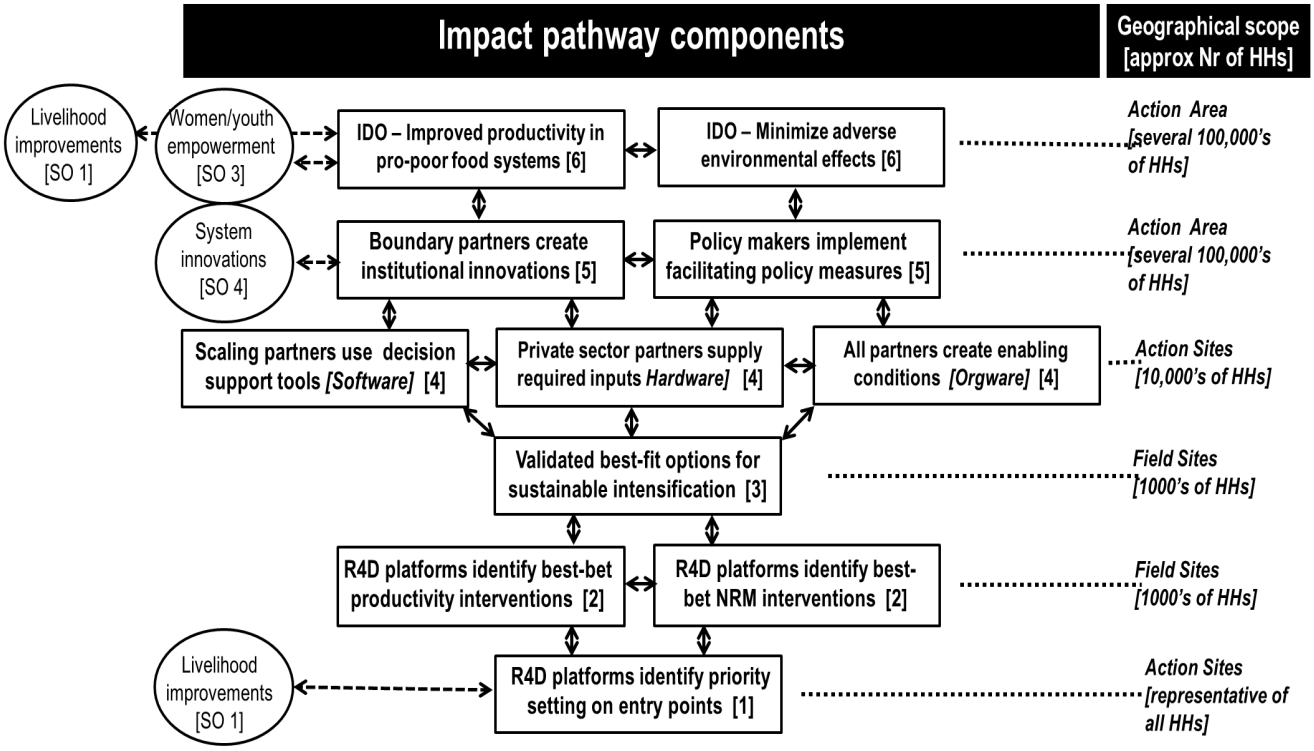
**Figure 3: Humidtropics' overarching Impact Pathway**




The starting point of the overarching Impact Pathway relates to activities needed to develop change coalitions of systems actors at farm, institutional and landscape levels, and develop their capacity to prioritize, experiment and learn. This enables the system's capacity to innovate (see IDO Innovation), empowers women and youth, and ensures their participation (see IDO Gender) to work on systems interventions. Based on the identified problems and priorities combined with desired development outcomes, a series of site-specific social and technical innovations will be developed through multiple, often competing systems interventions. The innovations stimulate increased system productivity, which leads to realization of IDOs on Income, Nutrition and Environment – all three contributing to improved livelihoods and ecosystem integrity. The enabling IDOs on Innovation and Gender influence the other IDOs throughout and also result in changes in livelihoods, equity and empowerment status.

At the Flagship and field levels, the core of the Impact Pathway is the integrated systems research addressing key components and aimed at enhancing income, livelihoods and environment in respective locations. Partnerships, developed through R4D and Innovation Platforms, will be central in this research. An example of a specific Impact Pathway on Sustainable Intensification is shown in Figure 4.

**Figure 4: Impact Pathway for Sustainable Intensification, indicating geographical scope and approximate number of households (HH).**




This Impact Pathway primarily involves IDOs on productivity and Natural Resources Management (NRM), but with links to IDOs on Income, Gender and Nutrition. At Action Sites, Humidtropics will facilitate the identification and prioritization of entry points for sustainable agricultural intensification [1]. These entry points cover aspects of best-bet improved productivity and NRM interventions [2]. They will be validated through participatory action research, seeking best-fit options for sustainable intensification that are aligned to prevailing agro-ecological conditions, market access, natural resource status and resource endowments of farm families. Validating best-fit options for sustainable intensification [3] will include specific focus on gender and youth. Scaling processes are designed so that pro-poor best-fit options are tested across a sufficient range of context diversity at Action Sites. They are defined by socio-ecological gradients and farmer typologies that integrate the gender dimension to refine our understanding of what works where and for whom. Development partners use decision support tools for best-fit interventions to scale sustainable intensification interventions. This requires partnerships and networking with other initiatives and programs, such as national development plans, government development programs and donor-supported investment programs. It also needs private and public sector actors to create enabling conditions, including access to inputs, micro-finance, market facilitation, and value addition opportunities [4]. Boundary spanning partners will engage with farmers and farmer associations in creating institutional innovations towards the uptake of sustainable intensification options supported by facilitating policy measures [5]. This will move best interventions for sustainable intensification from the Action Site to the Action Area, eventually delivering on the target IDOs [6].

## 2. Flagship Projects

In 2013, Humidtropics adopted the concept of "Flagship Project" as the main programmatic vehicle through which research is carried out for the attainment of IDOs. There are five Flagship Projects. The first Flagship Project is crosscutting in nature to ensure coherence across the entire program, in both research and capacity development. The remaining four Flagship Projects are based on geographic location, covering East and Central Africa highlands, West Africa lowlands, Central Mekong, and Central America and the Caribbean regions. The five Flagship Projects are further described below.

### Crosscutting Flagship Project

The crosscutting Flagship conducts research that is relevant to all of the area-based Flagship Projects and includes the synthesis of lessons learned through the entire program. Clusters of activities under this Flagship include (i) Global Synthesis on Systems Research; (ii) Strategic Nutrition Research; (iii) Scaling and Institutional Innovation; (iv) Gender Research and Integration; and (v) Capacity Development. The cluster on global synthesis is essential for enabling Humidtropics to present a global perspective, and to analyze and synthesize research deliverables and knowledge base across all Action Areas and Sites. This includes information related to agricultural population, poverty, production systems, market access and natural resource integrity. The strategic nutrition cluster focuses on ensuring incorporation of nutrition dimensions within the production and livelihood systems. The research involves piloting a set of next generation tools and methodologies in target Action Sites, including innovative ways to measure nutrient gaps, identify typologies and entry points, and develop Innovation Platforms to improve dietary diversification and nutrition security in target Action Areas. Nutrition-sensitive systems interventions will be identified and implemented at household, community and policy levels in the piloted sites. The cluster on systems innovation will involve developing methods, tools and indicators for assessing system innovation and responsible scaling. This will include developing tools for measuring the contribution of R4D Platforms to institutional innovation and system innovation. Gender research within the crosscutting Flagship will aim at developing transformative innovation strategies to gender equity by improving the targeting and design of innovations to take account of salient gender norms in target populations and regions. This will include participation of Humidtropics in a project entitled "Innovation through transformation of gender norms in agriculture and natural resource management", a global comparative research study of the CGIAR Gender Research Group, with other global partners. The cluster on capacity development will focus on responding to the global capacity and learning needs of Humidtropics. Increased support to capacity development will be needed if the projected increasing levels of investment in AR4D are to generate sustainable returns. To support this, we will implement a wide range of methods and activities in 2014, and during 2015-2016, including carrying out research on how capacity development can support the achievement of the IDOs. Other areas of work will include developing and refining training materials/tools, coordinating and facilitating training workshops, supporting the platform implementation process, coordinating a postgraduate research fellowship scheme, and leading learning processes throughout Humidtropics.

### Area-Based Flagships

The area-based Flagship Projects are designed to result in improved livelihoods for smallholder farming communities in the respective areas, based on sustainable productivity improvements and on social and technical innovations in institutions and in natural resources management. Within each Action Site, R4D Platforms have been established, through which generic entry points for interventions have been identified and Field Sites (districts, counties or other administrative unit) selected for Humidtropics implementation. The R4D Platforms in each Action Site build on new and existing partnerships, including farmer organizations, advisory services, research and development partners, the private sector, and policy making entities. Research in each of the area-based Flagship Projects consists of four broad clusters of activities: (i) Systems Analysis and Synthesis, (ii) Integrated Systems Improvement, (iii) Scaling and Institutional Innovation, and (iv) R4D Partnership Development. The four area-based Flagship Projects are briefly described below:

**East and Central Africa Highlands Flagship**

The East and Central Africa Flagship Project covers the highlands (1,125-1,800 m above sea level) of Western Kenya, Southern Uganda (Lake Victoria Basin), the Ethiopian highlands, Eastern DR Congo, Burundi and Rwanda. The area is uniquely endowed with great potential in terms of water, soils and a variety of staple and cash crops as well as livestock. Agriculture is the mainstay of the economy of the area. However, with an average population density of 263 persons/$km^2$, 36% of the population living on less than US$1.25/day, and 49% of the total land estimated to be degraded, the region faces debilitating poverty and food insecurity. The Flagship Project will involve integrated research to remove barriers to production and enable enhanced livelihoods and natural resources management. The entry points identified include improved soil fertility management, integration of legumes and trees into production systems, crop diversification, nutritional integration into cropping and food systems, strengthening of seed systems, integrated livestock production, *Striga* management, and the development of improved value chains for priority commodities.

**West Africa Lowlands Flagship**

In West Africa, the humid tropics occupy an area of 206 million ha and are home to 145 million people. About 28% of the population live on less than US$1.25/day, the average market access is 3 hours and 58% of land area is estimated to be degraded. The Flagship Project has Action Sites in the humid and sub-humid regions of Nigeria, Cameroon, Ghana and Ivory Coast. The Nigeria and Cameroon Action Sites are now operational and the Ivory Coast and Ghana Sites will be initiated during 2014. In the Nigeria and Cameroon Action Sites, the broad entry points identified include intensification and diversification of the tree crop systems, intensification of food crop systems, involvement of youth in agriculture, improvement of market access and strengthening of institutions for innovation. The research will contribute towards Humidtropics' IDOs, with particular emphasis on income, productivity, environment and innovation.

**Central Mekong Flagship**

Over 300 million people live in the Central Mekong area, 63% of whom are agriculture dependent and 29% live on less than US$1.25/day. Three Action Sites have been selected encompassing portions of six countries. By the end of 2014, we expect to have operational R4D Platforms in northwest Vietnam, central Vietnam and northern Thailand. These R4D Platforms will have identified local entry points, and developed and tested entry points. Moving into 2015-2016, the Flagship will focus on systems interventions and analysis of trade-offs among the key components. Diagnosis and platform establishment is planned to move into new locations, namely Cambodia, Southern Laos and Myanmar. Emerging themes for interventions during 2014 and into the extension period 2015-2016, include integrated crop-fodder-livestock systems, involving interaction with erosion control and soil fertility management; diversifying mono-crop rubber forests; sustainable intensification of rice rotations with vegetables and potatoes; tackling malnutrition through increasing dietary diversity; integrated pest management; enhancing value-chains, and market access for key commodities. All interventions are targeted to contribute towards all IDOs, though there would be differentiated emphasis on certain IDOs, based on the prioritization within respective Action Sites.

**Central America and the Caribbean Flagship**

The Central America and Caribbean Flagship, working in three Action Sites (northern Nicaragua, greater Trifinio in Honduras-Guatemala-El Salvador, and the border region in Haiti-Dominican Republic) is characterized by erosion and nutrient depletion of soils resulting in degradation of 75% of agricultural lands. In the northern Nicaragua Action Site, the research focus will be on three major land use systems: maize-bean-livestock-tree; coffee-banana-tree; and cocoa-banana-tree. A more detailed mapping process of stakeholders, their linkages and mechanisms has provided the basis to assemble a diverse group of partners into incipient Innovation Platforms. These groups generate approaches focusing around the farm household as an enterprise/livelihood system/agro-ecosystem management unit, the multi-farm territory with important service and support functions in ecosystem services, infrastructure

and market access and diverse forms of social capital, and the broader institutional and market system. Main research products will be on institutional innovation (policy), dietary diversity in food security, farm/local territory modelling, household decision making tools (trade-offs, resilience), and trade-offs within integrated livestock-fodder–crop-tree systems. During the extension phase, activities and partnerships will extend into the Greater Trifinio area (including parts of Honduras, El Salvador, and Guatemala), where an Action Site will be initiated.

**Anticipated Changes in Program Orientation**

Efforts will continue during 2015-2016 at strengthening the orientation of the program towards integrated systems research within the domain of Flagships. It will also be backed up with foresight and modelling activities to determine the most appropriate interventions, and their related synergies and trade-offs within or between domains (management and technology, markets and institutions, or policy). Two key elements are necessary for this to happen. The first is the need for strengthened expertise/staffing in systems research approaches and analysis. This is being addressed in 2014 by recruiting a Senior Systems Research Scientist as part of the leadership team. There are also plans for specific capacity development efforts for research partners and other key actors in platforms. The second is to ensure that budget allocation formula is so designed as to be able to support collaboration and integrated approaches in research. These processes have been built into POWB 2014, and would be expanded through the extension period. With regard to the geographic locations defining Flagships, Humidtropics is currently operating in Tier 1 Action Areas. These locations will continue to be priority during the extension period; however the program is expected to expand into Tier 2 locations (West Africa Moist Savannahs, Southern Africa Moist Savannahs, Northern Andes Transect, and Indonesian Humid Lowlands) from 2017, as part of phase 2 operations.

**Results-Based Management:** Humidtropics is one of five CRPs conducting a pilot project on Results-Based Management (RBM), guided by the Consortium Office. The pilot involves allocation of special resources to support research generation from R4D Platform action. Proposals are developed by Platforms and grants awarded, on both competitive and commissioned basis. The management of these projects and the grant resources are fully subjected to the principles of RBM. This includes mainstreaming M&E procedures, incorporating key data management processes such as (i) formulating sub-objectives (results), (ii) selecting indicators to measure progress towards each objective, (iii) setting explicit targets for each indicator, (iv) regularly collecting data on results to monitor performance, (v) integrating evaluations to provide complementary performance information; and (vi) using performance information for purposes of accountability, learning and decision-making. The process of phasing-in a RBM System will continue during the extension period. In 2015 and 2016, the number and size of these RBM grants will increase by shifting more resources to allow for larger scale implementation, in preparation for full-scale implementation in the second phase of Humidtropics beginning in 2017.

## 3. Gender

Gender is core in systems research and a central theme in Humidtropics and will be carried out during the extension phase in the strategic dimensions outlined here. It is identified as one of six IDOs – an 'enabling' IDO – that supports the achievement of the other IDOs; though also producing output and outcome targets in its own right. The IDO on Gender focuses on a reduction in gender disparities in access to inputs, services and technologies, a reduction in the drudgery of women's labor, an increase in productivity in men and women-managed farms, improved women's empowerment for decision-making and income management leading to increased gender equity and balanced empowerment of men and women (SLO). It also involves a better understanding and appreciation of gender roles and inter-relations, and how they could be enhanced through optimization of capacities and benefit-sharing among men and women. Empowerment of youth and marginalized groups is also an essential component of the gender research goal of Humidtropics.

Gender research will be undertaken within the crosscutting Flagship and also mainstreamed into each of the four area-based Flagship Projects; all research activities are required to show gender implications, relevance and analysis in the development and implementation of the research agenda. As part of the gender mainstreaming component, the following elements will be built into the extension phase research:

- Gender research and analysis in the research cycle, from situational analysis and entry point identification, through planning and testing of innovations, to monitoring and evaluating of their outcomes.
- Technologies and services will be selected, developed and evaluated to ensure that they address critical gender issues.
- Sex-disaggregated social data will be collected and used to diagnose important gender-related constraints. This will be achieved using both quantitative and qualitative approaches.
- Through capacity development, a gender knowledge base is created containing gender equity challenges and opportunities, and strategies to address gender inequality across the platforms. This requires gender training tools and modules to ensure gender mainstreaming and analysis.
- Institutional architecture for integration of gender is in place. This will include strengthened staffing and specific budget allocations for gender research and mainstreaming.
- Gender dimensions are built into Humidtropics' M&E system, which supports operational and performance monitoring as an input to program management and accountability. This will include development of protocol for tracking progress on integration of gender in research.

## 4. Partnerships

The Theory of Change and Impact Pathways of Humidtropics are all based on the existence of relevant actor groups and institutions working together in partnership towards the realization of development outcomes from integrated systems research for development. The partnership strategy of Humidtropics identifies three levels of partnership engagement. The first level, "Core Partnerships" involves the partnership among the founding members of Humidtropics. These consist of the 11 core institutions who sign Program Participant Agreements with IITA, as lead center for Humidtropics, for undertaking and facilitating core areas of work. This batch currently consists of seven CGIAR centres (IITA, ILRI, ICRAF, CIP, IWMI, Bioversity and CIAT) and four non-CGIAR institutions (FARA, *icipe*, Wageningen University and AVRDC). The second category of partners consist of institutions that take some active leadership roles in the implementation of Humidtropics research or in the facilitation of research processes in particular Action Sites or research domains. Such responsibilities include R4D Platform coordination, Action Site facilitation, or leading a sub-component in research. These partners operate on delegated authority of a core partner through sub-contracting agreements. The third category of partnerships involves the wider collaboration of implementation partners who engage in the R4D Platforms and participatory research, at the various Action Sites. This third category has the largest number of institutions, participating to varying degrees in the implementation of Humidtropics. The following section provides some description of partnerships within the various area-based Flagships. These partnerships will be expanded into the extension period.

### Partnerships in East and Central Africa Highlands Flagship

Good progress has been made in establishing partnerships with research and development organizations that participate directly in the R4D process, and they include CGIAR and advanced research partners, universities, national research institutes and development partners. Some specific examples are: (i) University of Rwanda/College of Agriculture and Veterinary Medicine (UR/CAVM) – involved in the implementation of specific activities at Innovation Platform level in Rwanda; (ii) Equity Bank, Rwanda – involved in management of small loans to members of Innovation Platforms (for various technologies emanating from platforms research), and encourages farmers on efficient and effective community banking, savings and borrowing; and (iii) IMBARAGA – Rwanda National Federation of Farmers – involved in facilitation and organization of farmers into marketing associations to target niche markets. National policy makers, who are not directly involved in the research, but play important roles

in influencing the direction of research programs, have also been engaged in various countries. Examples of existing partners in this domain include Ministries of Agriculture in Rwanda, Uganda, South Kivu, Kenya, and Ministry of Water and Energy in Ethiopia. Finally, farmer organizations have also been engaged in particular countries to participate in the platforms and also help to mobilize their members.

**Partnerships in West Africa Lowlands Flagship**

In West Africa, Humidtropics collaborates with a broad range of partners, including both national and international organizations. These include ministries, universities, research centers, private sector, farmer organizations and input suppliers. Examples are the Institut de Recherches Agricoles pour le Développement (IRAD) in Cameroon and the Osun State Ministry of Agriculture in Nigeria, who are playing major leadership roles, facilitating R4D Platforms for the Cameroon and Nigeria Action Sites, respectively, through their assigned staff members as Action Site Facilitators. The international research and development organizations present in the Flagship are CIRAD, CARE, GIZ, SNV, Catholic Relief Services and AFD who are involved in development processes, and as participants on R4D Platforms. An example of private sector partnership is with Mars Inc. funding the bilateral research and development project Vision for Change (V4C) being implemented in Sobre, Côte d'Ivoire, contributing to both Humidtropics and to the CRP Forest, Trees and Agroforestry (FTA). The work is carried out in partnership with ICRAF and national partners.

**Partnerships in Central America and the Caribbean Flagship**

Partnerships in the Flagship are built on existing "traditional" CGIAR partners like NARS, national universities, NGOs and advanced research institutions. Some specific examples are as follows:
(i) CATIE, a regional research and education institution, is involved in complementary research activities in Action and Field Sites (ecosystem services, platforms); (ii) Wageningen University is involved in research activities in Action and Field Sites (policies, incentive strategies, modelling); (iii) Heifer International and Catholic Relief Services are involved with scaling, and development linkages (existing collaboration in other CRPs); and (iv) IICA (Inter-American Institute for Cooperation on Agriculture) is involved with development linkages, out-scaling, policy linkages and coordination support (presence in all Action Sites, strong interest/push to collaborate). The partners and collaborators also include the decade old R4D Platform called the Central American Learning Alliance, bringing together research centres (CIAT and CATIE) with development NGOs to build methods and tools to generate and fill knowledge gaps. The traditional partners at Action Site level will continue to be crucial. At the Field Site level, partnerships will include local government, farmer groups and NGOs as national partners.

**Partnerships in Central Mekong Flagship**

Humidtropics partnerships in Central Mekong are quite advanced. The Vietnam Academy of Agricultural Science (VAAS) is an umbrella organization linking a number of agricultural research institutes that are important partners and collaborators of Humidtropics. This includes the Fruits and Vegetables Research Institute (FAVRI), the Northern Mountainous Agriculture and Forestry Science (NOMAFSI), and the Soil and Fertilizer Research Institute (SFRI). NOMAFSI is chairing the R4D Platform for northwest Vietnam and is also a research and development partner in the Action Site. FAVRI is specialized in research on fruits, vegetables and ornamental crops focusing on the northern and central provinces of Vietnam, and has become an important Humidtropics research partner. They have contributed to the situational analysis and the identification of best-bet options for sustainable intensification through vegetables, and are now involved in assessing the potential for intensification through vegetables in northwest Vietnam. Other key partners handling specific components of work include Chiang Mai University (CMU) in Thailand; Tay Nguyen University (TNU) in Vietnam; and the National Agriculture and Forestry Research Institute (NAFRI) in Laos. In Yunnan Province, important partners are the College of Agronomy and Biotechnology, Yunnan Agricultural University (CAB-YAU) and the Industrial Crop Research Institute, Yunnan Academy of Agricultural Sciences (ICRI-YAAS).

**Partnerships with Other CRPs**

As a systems CRP, Humidtropics has established strong partnerships with a number of CRPs. There is active partnership engagement among the three systems CRPs (Humidtropics, Dryland Systems and AAS), with regular consultations and a number of joint activities undertaken. These partnerships will intensify into the extension period, especially related to issues of sustainable intensification, capacity to innovate, and other IDOs. The partnership established between Humidtropics and RTB is a most significant one. In 2013, a number of engagements culminated in a workshop for planning concrete joint projects starting in 2014 for implementation between Humidtropics and RTB. Further interaction is planned for 2014 and through the extension period, especially in relation to joint research on RBM piloting. Other CRPs with which Humidtropics will intensify partnership efforts in coordination, co-location and collaboration during the extension period are A4NH, MAIZE, L&F, WLE, FTA and CCAFS. Consultation with these CRPs is at variable levels but will be given a boost in the coming phase.

## 5. Regional Collaborations

Partnership with regional and sub-regional organisations is essential particularly for scaling out purposes; though research partnerships also apply in some instances. In sub-Saharan Africa, regional organizations that help to promote Humidtropics regionally and influence national policies, include the Forum for Agricultural Research in Africa (FARA); the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA); and the West and Central African Council for Agricultural Research and Development (CORAF/WECARD). CORAF's experience in integrated agricultural research for development (IAR4D) and multi-stakeholder Innovation Platform processes, and FARA's experience in Innovation Platforms for Dissemination of New Agricultural Technologies in Africa (DONATA) are shared to strengthen the establishment and facilitation of R4D and Innovation Platforms in Humidtropics Action Sites. FARA is a founding partner in Humidtropics and involved in the execution and coordination of research with partners through the sub-Saharan Africa Challenge Program it led, which is now mainstreamed into Humidtropics. These links with FARA, CORAF and ASARECA in Africa are a major channel for associating Humidtropics with the Comprehensive African Agricultural Development Program (CAADP). It also provides a channel for policy engagement and information dissemination between Humidtropics and member countries within the respective regions.

In the Central Mekong Action Area, Humidtropics has initiated contacts for collaboration with the multilateral cooperative platform in agriculture, ECCAST-GMS (Exchange and Cooperation Consortium for Agriculture Science and Technology in GMS). The members of ECCAST-GMS are drawn from agriculture research and development institutions coming from Cambodia, Yunnan Province, Myanmar, Thailand and Vietnam. It aims at agricultural science and technology generation and utilization via cross-border cooperation and exchange among GMS countries so as to support food security, poverty alleviation and environment sustainability, and to lead agricultural development in GMS. These goals are very identical to Humidtropics goals, and it is for this reason that efforts are on-going to develop a strong partnership relationship with ECCAST-GMS. The Head of ECCAST-GMS participated in the Humidtropics launching and planning meeting held in Hanoi. In 2014 and during the extension phase 2015-2016, this collaboration will be strengthened for purposes of policy convergence, scaling out and impact generation. In the Central America and Caribbean region, contacts have been initiated through CIAT and partners in relation to strengthening collaboration with the Inter-American Institute for Cooperation on Agriculture (IICA). This is particularly aimed at influencing policy processes in the respective countries through IICA, and to coordinate activities especially focused at climate change, sustainable livestock production and capacity building. Apart from this, through its regional character, IICA is a good platform to connect with partners in other countries within the region, especially through its direct link with the CAC (Council of Ministers of Agriculture in Central America). For instance, IICA-Haiti has recently assisted Humidtropics to establish contacts with Haitian authorities (Ministry of Agriculture). Increased efforts will be made to strengthen the links with regional organizations during the extension phase 2015-2016.

## 6. Phased work plan covering the 2-year extension period

Given the integrated systems approach explained in the sections on Theory of Change and Impact Pathway, planned activities and expected results at the strategic level of planning are continuous and repetitive based on the change coalitions priorities and activities at the lower level of planning. As such the geographical areas are indicated in the table in the four area-based Flagship Projects where activities take place in 2015-2016. Expansion of such geographical base is expected in the second phase.

| Cluster of Activities | Description of planned key activities 2015 and 2016 | Expected results of planned key activities 2015 | 2015 activities with 2016 results |
|---|---|---|---|
| **1 Crosscutting Flagship Project** | | | |
| **1.1 Global Synthesis** | - To support learning across area-based Flagships by sharing new tools, methods, approaches and guidelines for systems analysis and interventions.<br>- To extrapolate, aggregate, compare and contrast, and analyse gender-disaggregated data related to experiences, research, approaches, outputs and outcomes.<br>- To quantify actual and expected reach of scaling activities. | 1.1.a Area-based Flagship Projects use a global strategic framework with tools, methods and guidelines for integrated systems analysis and global synthesis.<br>1.1.b Gender-disaggregated data used by research and development partners. | Framework and data used by R4D partners in at least 4 Action Sites per Action Area |
| **1.2 Strategic Nutrition Research** | - To develop and apply improved approaches to determine the availability, accessibility, and composition of local food biodiversity, and to pilot targeted interventions to increase dietary diversity resulting from awareness raising, production and marketing options.<br>- To develop and implement a new approach for evaluation of diets and nutrition at household and community level.<br>- To map the potential nutrition impact pathway from improved farming systems to household diet.<br>- To facilitate a community of practice across Action Sites and with other CRPs on dietary diversity approaches to nutrition. | 1.2.a Nutrition option framework considering gender priorities used by area-based Flagships and wider research and development community for definition of dietary diversity entry points and potential interventions.<br>1.2.b Monitoring and evaluation used by R4D and Innovation Platforms in Flagship regions to design more site-specific approaches to nutrition sensitive programs. | Training on tools for diagnostics, awareness raising, intervention design and monitoring for learning for key platform partners in 4 Action Sites per Action Area.<br>Framework and data used by R4D partners in at least 4 Action Sites per Action Area to design nutrition sensitive programs.<br>R4D and Innovation Platforms monitor and evaluate interventions for gender transformational potential and scaling out strategies. |
| **1.3 Scaling and Institutional Innovation** | - To develop a framework to enhance institutional innovation capacity and responsible scaling. | 1.3.a Knowledge base on scaling strategies and institutional innovations used by area-based Flagships and wider research and development community.<br>1.3.b Development partners use framework to influence knowledge, attitudes and behaviours of end-users in scaling integrated systems innovations. | Knowledge base developed and used in each of the area-based Flagships by primary users.<br>Development partners in at least 1 Action Site per Action Area use framework. |
| **1.4 Gender Research and Integration** | - To improve the targeting and design of innovations to take account of salient gender norms.<br>- To develop tools and training materials to help to mainstream gender in Humidtropics research.<br>- To create awareness about gender issues and expertise to collect and analyse gender related datasets. | 1.4.a The gender dimension is mainstreamed in Humidtropics and used by R4D partners for priority setting, systems interventions and decision-making.<br>1.4.b Gender norms study analysed and location-specific data on gender norms in agriculture identified. | Gender aspects are part of activities in each Action Site.<br>Salient gender norms are taken into account and used to improve the targeting and design of innovations. |
| **1.5 Capacity Development** | - To support R4D Platform implementation across Humidtropics.<br>- To strengthen the capacity of all stakeholders in their systems research approaches and in coalition functioning.<br>- Develop capacity of the next generation in systems research. | 1.5.a New capacities, methods and approaches for integrated systems research used by Humidtropics partners and the wider research and development community. | Knowledge base training and communication conducted by primary users in at least 3 Field Sites per Action Area. |

| Cluster | Description of planned key activities | Expected results 2015-2016 | Geographical locations 2015-2016 |
|---|---|---|---|
| For the four area-based Flagship Projects (2. East and Central Africa; 3. West Africa; 4. Central Mekong; 5. Central America and Caribbean), activities and results at the strategic level are based on the SRTs and R4D partnership development, and replicated in each geographical location. Phasing of sub-activities will be detailed in the annual work plans.<br>The "x" in the numbering below can be substituted with the number of each Flagship Project. For example, '3.1 Systems Analysis and Synthesis' refers to Flagship 3: West Africa. | | | |
| **x.1 Systems Analysis and Synthesis** | - To develop site-specific Theories of Change with quantified and qualified Impact Pathways.<br>- To characterize dominant integrated systems in the Action Sites at farm, socio-technical regime (institutional), and landscape levels.<br>- To identify entry points for integrated systems improvement at a range of scales and levels focusing on gender, markets, production systems, natural resource management, nutrition, institutions and policy in the Action Sites. | x.1.a Program participants use specific Theory of Change and related quantified and qualified Impact Pathways for each Action Site to guide systems intervention research.<br>x.1.b Characterization aids identification of entry points and baselines for project M&E.<br>x.1.c Entry points used by R4D Platforms and SRT2 to develop and trial interventions.<br>x.1.d Results of systems trade-off and synergy analysis in each Action Site used by program participants as input for research on scaling and institutional innovation. | At the detailed level of implementation activities in all four clusters presented here take place at field research sites in the below Action Sites during the extension phase based on priorities and entry points set by change coalitions such as R4D Platforms. So phasing is actually related to scaling of activities within these locations.<br><br>**ECA:** W. Kenya, Lake Victoria Basin (Uganda), W. Ethiopia, Rwanda, Burundi, South and North Kivu (DRC).<br><br>**WA:** Southwest Nigeria (Oyo-Osun-Ondo States); A transect from Center Province to South West Province in Cameroon, Southern Ivory Cost and Southern Ghana.<br><br>**Mekong:** "Green Triangle" area of South Western China, North East Laos and North West Vietnam; "Golden Triangle" area of South Western China, North West Laos, Eastern Myanmar and Northern Thailand; "Development Triangle" area of Central Vietnam, Southern Laos and North East Cambodia.<br><br>**CAC:** Northern Nicaragua and the border area between Haiti and the Dominican Republic. |
| **x.2 Integrated Systems Improvement** | - To undertake integrated systems research through R4D Platforms at particular Action Sites.<br>- To conduct action research on different sets of social and technical innovations.<br>- To analyze trade-offs and synergies between multiple systems' interventions per selected system in the Action Sites between alternative production components.<br>- To undertake gender mainstreaming and research within systems innovations.<br>- To assess and improve total factor productivity, systems income and natural resources status of different household typologies, including through use of modelling and simulation tools for ex-ante analysis of interventions.<br>- To analyse integrated and competing integrated value chain alternatives and identify sustainable organisational and marketing models, approaches and policies.<br>- To co-design and test more diverse and ecologically intense integrated systems that are resilient to changing social, political, economic, cultural, technical and ecological contexts. | x.2.a Best-bet social and technical system innovation options from social, technical and institutional innovations transformed into best-fit options by first-users. | |
| **x.3 Scaling and Institutional Innovation** | - To assess the contribution of R4D and Innovation Platforms to social, technical and institutional systems innovations.<br>- To assess pathways and success factors for responsible scaling.<br>- To improve the current systems' capacity to innovate at farming systems, socio-technical regime and landscape levels.<br>- To bring systems innovations to scale. | x.3.a Selected development institutions use tools, guidelines and publications on systems productivity, natural resources and institutional development considering the gender dimension. | |
| **x.4 R4D Partnership Development** | - To organise and support implementation and process leadership of R4D and Innovation Platforms.<br>- To embed Humidtropics research in existing or new R4D and Innovation Platforms and other coalitions on gender-sensitive social and technical integrated systems interventions.<br>- To widen participation, improve coordination and support communication between partners, through R4D Platforms. | x.4.a R4D, Innovation Platforms and other coalitions used to widen collaboration and research implementation among stakeholders.<br>x.4.b Stakeholder mapping and social analysis reports used by partners to prioritize, initiate, and manage gender-sensitive social and technical systems interventions. | |

## 7. Budget 2015-2016

| Flagship Projects with clusters of activities | 2015 budget US$ | | | 2016 budget US$ | | | 2015+2016 US$ | Gender | Estimated allocation to IDOs 1-Income 2-Nutrition 3-Productivity 4-Environment 5-Gender 6-Innovation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W1 / W2 | W3 Estimate* | Bilateral Estimate* | W1 / W2 | W3 Estimate* | Bilateral Estimate* | TOTAL | | 1 | 2 | 3 | 4 | 5 | 6 |
| **1 Crosscutting** | | | | | | | | | | | | | | |
| 1.1 Global Synthesis | 836,000 | | | 836,000 | | | **1,672,000** | 20% | 30% | 10% | 10% | 10% | 30% | 10% |
| 1.2 Strategic Nutrition Research | 760,000 | | | 794,200 | | | **1,554,200** | 63% | 0% | 50% | 0% | 0% | 40% | 10% |
| 1.3 Scaling and Institutional Innovation | 684,000 | | | 836,000 | | | **1,520,000** | 20% | 0% | 0% | 5% | 5% | 30% | 60% |
| 1.4 Gender Research and Integration | 722,000 | | | 877,800 | | | **1,599,800** | 100% | 0% | 0% | 20% | 0% | 70% | 10% |
| 1.5 Capacity Development | 798,000 | | | 836,000 | | | **1,634,000** | 50% | 0% | 10% | 30% | 10% | 2%0 | 30% |
| **Crosscutting Flagship Subtotal A** | **3,800,000** | **871,000** | **0** | **4,180,000** | **1,018,000** | **0** | **9,869,000** | **41%** | **6%** | **14%** | **13%** | **5%** | **38%** | **24%** |
| **2 East and Central Africa** | | | | | | | | | | | | | | |
| 2.1 Systems Analysis and Synthesis | 729,600 | | | 535,040 | | | **2,600,240** | 22% | 15% | 10% | 20% | 20% | 25% | 10% |
| 2.2 Integrated Systems Improvement | 2,736,000 | | | 2,675,200 | | | **14,432,275** | 25% | 10% | 5% | 50% | 20% | 10% | 5% |
| 2.3 Scaling and Institutional Innovation | 790,400 | | | 802,560 | | | **2,216,660** | 32% | 20% | 10% | 0% | 0% | 30% | 40% |
| 2.4 R4D Partnership Development | 1,824,000 | | | 2,675,200 | | | **4,499,200** | 33% | 15% | 10% | 30% | 10% | 20% | 15% |
| **Subtotal** | **6,080,000** | **6,933,000** | **1,795,000** | **6,688,000** | **8,102,000** | **1674500** | **30,912,500** | **26%** | **15%** | **9%** | **25%** | **13%** | **21%** | **18%** |
| **3 West Africa** | | | | | | | | | | | | | | |
| 3.1 Systems Analysis and Synthesis | 712,500 | | | 418,000 | | | **2,012,500** | 27% | 15% | 10% | 20% | 20% | 25% | 10% |
| 3.2 Integrated Systems Improvement | 2,137,500 | | | 2,090,000 | | | **10,695,500** | 25% | 10% | 5% | 50% | 20% | 10% | 5% |
| 3.3 Scaling and Institutional Innovation | 475,000 | | | 627,000 | | | **1,742,500** | 15% | 20% | 10% | 0% | 0% | 30% | 40% |
| 3.4 R4D Partnership Development | 1,425,000 | | | 2,090,000 | | | **3,515,000** | 17% | 15% | 10% | 30% | 10% | 20% | 15% |
| **Subtotal** | **4,750,000** | **5,370,000** | **720,000** | **5,225,000** | **6,273,000** | **842,000** | **23,180,000** | **24%** | **15%** | **9%** | **25%** | **13%** | **21%** | **18%** |
| **4 Central Mekong** | | | | | | | | | | | | | | |
| 4.1 Systems Analysis and Synthesis | 370,500 | | | 217,360 | | | **867,160** | 22% | 15% | 10% | 20% | 20% | 25% | 10% |
| 4.2 Integrated Systems Improvement | 1,111,500 | | | 1,086,800 | | | **2,979,168** | 25% | 10% | 5% | 50% | 20% | 10% | 5% |
| 4.3 Scaling and Institutional Innovation | 247,000 | | | 326,040 | | | **762,040** | 13% | 20% | 10% | 0% | 0% | 30% | 40% |
| 4.4 R4D Partnership Development | 741,000 | | | 1,086,800 | | | **1,827,800** | 17% | 15% | 10% | 30% | 10% | 20% | 15% |
| **Subtotal** | **2,470,000** | **0** | **952,000** | **2,717,000** | **0** | **1,111,000** | **7,250,000** | **22%** | **15%** | **9%** | **25%** | **13%** | **21%** | **18%** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5 Central America & Caribbean** | | | | | | | | | | | | | | |
| 5.1 Systems Analysis and Synthesis | 285,000 | | | 167,200 | | | **569,800** | 45% | 15% | 10% | 20% | 20% | 25% | 10% |
| 5.2 Integrated Systems Improvement | 855,000 | | | 836,000 | | | **1,989,200** | 34% | 10% | 5% | 50% | 20% | 10% | 5% |
| 5.3 Scaling and Institutional Innovation | 190,000 | | | 250,800 | | | **440,800** | 32% | 20% | 10% | 0% | 0% | 30% | 40% |
| 5.4 R4D Partnership Development | 570,000 | | | 836,000 | | | **1,406,000** | 33% | 15% | 10% | 30% | 10% | 20% | 15% |
| **Subtotal** | **1,900,000** | **96,000** | **220,000** | **2,090,000** | **112,000** | **151,800** | **4,569,800** | **36%** | **15%** | **9%** | **25%** | **13%** | **21%** | **18%** |
| **Area-Based Flagships Subtotal B** | **15,200,000** | **12,399,000** | **3,687,000** | **16,720,000** | **14,487,000** | **3,779,300** | **66,272,300** | 28% | | | | | | |
| **TOTAL A+B** | 19,000,000 | 13,270,000 | 3,687,000 | 20,900,000 | 15,505,000 | 3,779,300 | 76,141,300 | 26% | | | | | | |
| Lead Center Management Cost | 1,000,000 | | | 1,100,000 | | | 2,100,000 | | | | | | | |
| **GRAND TOTAL** | **20,000,000** | **13,270,000** | **3,687,000** | **22,000,000** | **15,505,000** | **3,779,300** | **78,241,300** | 25% | | | | | | |

*Estimates for W3 and Bilateral are based on 10% expected growth on the 2014 allocations. Given the unpredictable nature of these sources and their allocations to clusters this is only presented at aggregate level.