Annex B: Description of the WOTRO themes 2007-2010[1]

The WOTRO themes: perspectives for research

WOTRO desires to contribute to the realisation of the Millennium Development Goals. The research agenda of WOTRO for the coming years has been inspired by the MDGs and four themes have been identified among them: poverty and hunger, global health and health systems, sustainable environment and global relationships. These will be briefly introduced below, and some key areas of research (sub-themes) will be described. Three broader perspectives are important for all research that WOTRO stimulates. These are the global context, an interdisciplinary approach and equity.

Global context
Poverty and hunger, health, a sustainable environment and global relationships are strongly inter-related. Globalization and global-local interactions link the various themes.
Globalization can be understood as the complex interconnectedness of the world through the increased mobility of people and the increased speed of circulation of goods and ideas. Or, more specifically, as the time-space compression brought about by new information and communication technologies. Globalization is an uneven process which excludes certain regions in the world and groups and categories of people within those regions. It leads not only to integration, but to separation and fragmentation as well.

Interdisciplinary approach
Complex dynamics link developments in the fields of ecology, nutrition technology, economy and society. Interdisciplinary or interdisciplinary and long-term research can lead to a better understanding of the interactions between the origin and impact of problems and the effectiveness of policies for sustainable development. WOTRO invites researchers to collaborate in opening up new avenues of research into the most pressing global problems and their local effects.

Equity
Equity[2] or the equality of opportunity (within and across countries) is essential for sustainable development and poverty reduction. The effects of policies and interventions are not the same for different segments of populations. Therefore, research aimed at developing policies can only be adequate if it takes the issue of equity into account, both at the level of the implementation of policies (e.g. concerning health, or management of resources, property rights and trade) as well as in more 'upstream' research generating new insights that lead to new policies and innovative tools.

[1] To be linked to the NWO themes on Sustainable Earth, Cultural Dynamics, Health and Conflict.
[2] On equity, see e.g. World Development Report 2006: *Equity and Development.* (Author: World Bank)

A. Poverty and Hunger [3]

The poor in developing countries are exposed to a great variety of risks such as diseases, unreliable rainfall, volatility in prices and civil war. Lack of power increases their exposure to these risks. At the same time it hampers their capacity to improve their situation. They are caught in what is called a poverty trap. Poverty is exacerbated by poorly functioning systems of governance and ill-designed policies.
More interdisciplinary, collaborative and long-term research can help to create a better understanding of the origin and impact of poverty as well as the effectiveness of poverty reduction strategies. Within the theme of Poverty and Hunger WOTRO has identified three key areas for further research under this theme: 1) agricultural and institutional innovations; 2) disaster and displacement; 3) critical assessments of policies and interventions. WOTRO considers it crucial that local conditions and solutions for coping with poverty are studied in relation to large-scale and global processes. WOTRO encourages studies concerning rural and urban poor, including the most vulnerable groups among them, such as women, children and the ageing, minority ethnic groups, migrants and other displaced people.

Agricultural and institutional innovations
Increases in agricultural production can have a positive influence on fighting hunger and improving environmental and economic stability. This positive influence, however, is not automatic. The Green Revolution of the 1970s, for instance, concentrated on the production of large yields of major cereal crops (maize, wheat, rice) with less attention to balanced diets, or the nutritional quality of grain. The current livestock revolution is leading to a doubling in demand of crops for fodder. The availability of technology is not the only decisive factor in the choice of agricultural production systems. Farmer's decisions to maximise carbohydrate crops are related to labour availability. When labour is lacking (because of alternative options for workers such as migration or schooling) and when access to markets is limited, labour-extensive crops will be favoured and malnutrition may also be a result.

Malnutrition among poor populations can be fought in the first place by diversification in crop production (and dietary diversification) and, in the second place, by the improved nutritional quality of produce (e.g. improved protein contents of staple carbohydrates such as protein rich maize and cassava, or the 'biofortification' of the micronutrient content in tubers and grains). The necessary agricultural diversification (the combination of animal, trees and variety of crops) will go together with new labour options and the diversification of livelihoods in general. At the same time, climate change threatens existing production modes and selection of new varieties and crops, vegetables and fodder forms a key adaptive strategy to increasing environmental stresses.

Biotechnology and farmer-driven biotechnology research is recognised as a potential tool for crop and livestock improvement. It can include for example research into marker assisted breeding and genetically modified organisms (GMOs). Tailoring to the needs of small farmers, for instance by including key GMO traits in locally-adapted varieties of crops important to smallholder producers, is an important task for scientific researchers and

[3] References used are presented in Annex C.

donors, not in the least because multinationals - that also invest in biotechnological research and can afford the necessary testing and patenting - attend to focus on crops that return a large profit margin.

Often the institutions necessary for implementing new technologies are insufficient or have collapsed. Attention to institutions and policies appears to be at least as important as the technical information needed to increase productivity. This includes issues of organisation, knowledge, access, purchasing power, input provision, marketing etc., where institutions are needed that incorporate the poor. Research should not only focus on problems, but also on the necessary conditions for improvement, for instance by reflecting on failures and successes, and by addressing overall trends and expectations (such as the feminisation of agriculture) in a specific setting. Particular emphasis should be placed on the functioning of integrated crop-livestock farming systems, including the extended and complex rural livelihoods of smallholder producers, rather than focusing solely on individual components of the systems.

Displacement and disaster
In situations of man-made and natural disasters the poor are affected more than others. War, conflict, development-induced displacement and disasters lead to national and trans-national displacement and to impoverishment, malnutrition and livelihood crises that are difficult to overcome, even over a few generations. Understanding the precise mechanisms at work and identifying potential remedies is a matter of urgency. This may be linked to work on post-conflict reconstruction.

Further research is needed to measure the effects on rural and urban livelihoods, especially in terms of poverty and nutrition. This requires a more fine-grained analysis of local, social and gender-specific constructions of vulnerability. A next step is to reduce risk-exposure to disaster and related vulnerabilities through a more systematic and pro-active approach that transcends conventional relief responses.

Both rural-urban and rural-rural migration have become profitable and sometimes indispensable coping strategies. However, integration into new communities can be problematic. In the case of rural migration, contracts between landowners and migrants are often short term, leading to tenure insecurity and soil mining practices. This creates tensions between old and new inhabitants that can easily be exploited by politicians. Science can contribute to a better understanding of the causes, roles and effects of migration. It can also help to develop to design of sustainable farming systems, including options for agricultural diversification and soil improvement.

Urban migration also often leads to insecure contract labour and to tensions between different social, ethnic and religious groups. Urban impoverishment and hunger are increasing and research is necessary to target the most vulnerable groups and find solutions that will improve the living conditions of the poor and decrease (potential) conflicts. Migration also offers new opportunities. To exploit them, more understanding is needed of the viability of the rural-urban chain and its effects on social mobility and development of rural areas. Important questions are: whether mobility has led to multi-local livelihood

networks?; if so, how does this affect rural and urban development?; what are the income flows to and fro between rural and urban areas, and between countries?; and what implications do these aspects have for rural development?

Policies and interventions
A solution for poverty and hunger depends to a large extent on the policies of both donor and recipient countries. Very often however, increasing poverty and malnutrition indicators can be directly linked to inappropriate policies. WOTRO encourages research featuring a critical perspective on the effectiveness of policies and interventions as well as reflecting on the issue of development itself. Policies and interventions are part and parcel of existing power constellations. The latter therefore need to be addressed, including the analysis of failing or 'fading' states A solution to poverty and hunger depends to a large extent on policies of both donor and recipient countries. Scientific and policy programmes in tropical developing countries that are initiated or run by donors often function in a context of self-created artificial conditions that may not be sustainable after the programmes end. Our understanding of these artificial conditions, however, is still inadequate.
On the other hand, in their attempt to survive, people adopt coping strategies that can be successful or not, or only successful in the short-term. In order to support long-term coping strategies, discourage damaging forms and support promising local initiatives, we need a better understanding of the choices for coping with poverty and of processes of adaptation.

The effective targeting of poverty reduction strategies requires identifying the poor. Household surveys produce reliable estimates of poverty at the provincial level, but they are of limited use in targeting at lower levels. Recently, the combination of different data sources has made it possible to analyse more details at lower levels. This has created a virtual industry of "poverty mapping" in which Dutch research plays a central role. A similar trend is beginning to emerge in the field of vulnerability analysis. More adequate methodologies, application of the results to targeting, and spatial analyses of inequality, vulnerability and poverty are needed. A promising avenue is the incorporation of risk, vulnerability and poverty dynamics and considering the nature of the intervention and the characteristics of the poor.

Donors and NGOs are themselves increasingly expected to "prove" the effectiveness of their work to their stakeholders. Recently there has been an enormous improvement of quasi-experimental methods for assessing the impact of social policy. Although they allow the gradual accumulation of knowledge of what works and what does not, such methods are at present designed to evaluate highly specific "projects". A serious research effort is required to extend the methods to make them suitable for evaluating heterogeneous interventions.

B. Global Health and Health Systems

Health systems[4] are globally connected, and national health systems (in European and developing countries) will not only affect their own societies. They can also impact on the health of citizens in other countries because of the volume of people and goods moving across the globe. This is true both for the spread of infectious diseases and for the availability and the quality of health care personnel and medicines. In all cases, the quality of national health systems and international policies are of great importance for global health.

Since World War II, public health has been a domain for target-oriented global actions, including efforts to eradicate diseases, immunise the world's children, and halt the spread of HIV. In spite of successes, health outcomes prove difficult to establish and health gains are not often achieved. In general terms this is due to a lack of means and to power-imbalances. More specifically, weak health systems form one of the most striking barriers to better health in developing countries. They are often responsible for the failure to implement interventions in a sustainable way. New tools like diagnostics, vaccines and medicines can contribute to improving the quality of health systems. If, however, the social, economic and political constraints of health systems are not also addressed, it can be expected that in the developing countries new technological innovations alone will not be sufficient to establish the equal distribution of good health systems. The grand challenge in the field of global health is to develop a coordinated scientific methodology to help establish high quality and sustainable health systems that are tailor-made for local circumstances and flexible to global influences at the same time.

WOTRO encourages studies aimed at improving the quality of health systems of developing countries, with approaches from different perspectives, e.g. research into equal access to health programmes, research into the availability of applicable tools and assets, finances and personnel, and research into the relationship between global and national or regional health related policies. Preferably, studies will comprise all three perspectives in an integrated way.

Innovative approaches to improve access

Global strategies have been developed for addressing the Millennium Development Goals aimed at reducing child mortality, improving maternal health and combating HIV/Aids, malaria and other diseases. These strategies are implemented by health systems in a broad sense (i.e. not only including the public health system, but also private providers, community-based initiatives, actors in education and other sectors). However, vulnerable populations may not always have access to these interventions for a variety of reasons, including economic constraints, the limited availability and quality of required services, and socio-cultural barriers that are sometimes aggravated by conflict situations. Moreover, the quality of health programmes may be insufficient at various levels (health policy,

[4] In this text 'health systems' refers to all services, functions (including tools) and resources in a geographic area, whose primary purpose is to affect the health of a population.

organisation and management, and implementation). At the same time, supply driven public health programmes do not sufficiently acknowledge that people all over the world self-medicate common diseases by buying drugs over the counter from formal and informal vendors. In addition, the growing resistance of malaria and tuberculosis, as well as the availability in developing countries of resources for the treatment of HIV urge us, even more than before, to develop treatment programmes that are based on evidence, and use innovative approaches (e.g. that integrate disease specific approaches and are inter-sectoral). While extensive research has been conducted to describe social, cultural and economic barriers to and constraints on the effectiveness of health strategies, this has not led to sufficiently improved access to or performance of health systems. Therefore, research should move beyond description to analysis and intervention. WOTRO wishes to stimulate research that builds on existing knowledge, and leads to innovative approaches to improve the quality of health services as well as access to them.

Innovative and applicable tools and assets

The sustainable implementation of health programmes may also call for new or adjusted tools. Interventions exist for most health problems, including those that especially burden developing countries. But for some there still is a lack of affordable, culturally acceptable and safely applicable (behavioural and technical) interventions, strategies, diagnostics or other assets. For example, new diagnostics (low cost, easy to use) are needed for peripheral and community-based health services. Other diagnostics should be developed for use in district or reference laboratories (e.g. resistance testing). New drugs or treatment strategies may contribute to improved treatment outcomes, e.g. by allowing shorter treatment courses or by circumventing the development of resistant strains. To fight (vector-borne) infectious diseases, alternative methods to improve essential hygiene strategies, or vector-control strategies are required. In addition, new assets (delivery strategies, health promotion strategies, and vaccination strategies in conflict situations) may contribute to the improvement of (childhood) vaccination programmes. There are still no safe and effective vaccines for diseases like malaria, HIV, tuberculosis and other infectious diseases, notably those that affect children in their first years of life. New scientific approaches (genomics, systems biology) that are applied to the study of more western-oriented diseases must also be available for studying these so-called neglected diseases in order not to widen the science gap any further. The search for new scientific approaches (genomics, systems biology) will be encouraged. WOTRO pays special attention to the application of these approaches in finding solutions to health problems that specifically affect developing countries.

Global context

In the search for the implementation of new and existing interventions and better access to them, the global context of health policies and systems should not be underestimated. For example, the large-scale international trade of goods and increase in personal travel has resulted in new or enlarged human health risks that may not be limited to developing countries. And global processes, policies and strategies (e.g. ageing, the pricing system of medicines and vertical global health programmes) are increasingly influencing national health systems in developing countries. This means that health improvements in developing countries cannot be achieved without understanding the relationship between global policies

(including pricing policies) and national or regional policies, between traditional and western health care, and between public and private health care systems. That is why WOTRO considers research addressing these relationships important.

C. Sustainable Environment [3]

Natural resources are the basis of the livelihoods of billions of people, providing invaluable goods and functions. As demonstrated in the Millennium Ecosystems Assessment (MA, 2005) many resources and ecosystem services are currently under threat leading to the decline of biodiversity, species extinctions, deforestation, desertification, loss of fertile soils, declining water tables, lack of safe drinking water and nutrient loading and climate change. The growing cost of the degradation of ecosystem services is a direct barrier to achieving the MDGs. Attempts to counteract environmental degradation are hampered by increasing population pressures, ignorance of systemic dynamics, and lack of capital, education, appropriate technology and poorly functioning legal systems and institutions.
Many regions facing poverty overlap with areas of high biodiversity and/or areas vulnerable to environmental risks and degradation. The migration of impoverished inhabitants leads to urbanisation and slums, creating new sets of problems, for example in solid waste collection and processing, air pollution, and the provision of safe drinking water and domestic energy. The underlying processes of environmental degradation and associated problems involve complex interacting of ecological, economic, hydrological, demographic, social and institutional dynamics.
In many regions, existing resources such as land, water, pasture and trees are deemed insufficient to feed a growing, more demanding population, while an increasing demand for energy in newly-emerging economies contributes to global environmental change. The growing scarcity of resources may lead to increasing degradation and even violent conflict. Elsewhere, private and state institutions are starting to develop new and more sustainable resource management practices.

The Sustainable Environment theme comprises four key areas for addressing these interactions: i) management and conservation of ecosystems; ii) valuing resources and ecosystem services; iii) environmental governance; and iv) interactions between spatial, temporal and organisational domains. They are inspired by several international agendas. These four areas imply complementary approaches from different disciplinary perspectives. Natural science approaches serve to identify and assess the most relevant geological, geographical, physical, biological and ecological processes operating within ecosystems, explaining the natural complexity and dynamics of these systems. Secondly, the analysis of the societal processes that lead to unsustainability, and the identification of institutional and economic options for solutions will help us to understand the human dimension. And thirdly, complex systems studies are needed to understand the interplay between natural and human processes.

Management and conservation of ecosystems
The past decades have seen extensive population extinctions, fragmentation and quality loss of natural habitats, resulting in the decline of biodiversity and associated ecosystem services. Many new research tools have allowed us to examine in more detail where and how

conservation and management of natural and agricultural areas should and could be successful. These tools have helped to describe how invasive species, global warming, the logging of forests, impairment of hydrological systems (dams, irrigation), emerging infectious diseases and soil erosion are threatening the functioning of agricultural and natural ecosystems. But how do ecosystems change, which factors are the most critical, and what are the time scales, the discontinuities and thresholds for loss and recovery of ecosystems? These questions remain largely unanswered.
Modern research tools are still too much used in isolation. Integrative analysis should be used, in consultation with the stakeholders in the field, to set priorities for the equitable, efficient and stable conservation and management of specific ecosystems. Such conservation and management modes require social change. To make that possible, the social factors affecting the management of ecosystems should be identified and explained in their wider causal context, e.g. population growth and market developments. Under what conditions, for instance, are poor people able to invest in sustainable land use? Setting priorities and contextualisation both require insights from different disciplines, such as systems theory, communication science, the earth sciences, ecology, anthropology and economics.

Valuing resources and ecosystem services
Many of the services that natural and semi-natural ecosystems provide to society are not valued on markets. There is a strong trend promoted by international institutions and Northern institutions (governmental, commercial and civil society partners) to convert and value ecosystems against private, market-oriented use. However, this may be at the expense of common goods and the poor, as in the case of scarce water resources, for example. The assessment of the 'total economic value' of ecosystems is important, irrespective of whether a regulatory or an economic path ('payment for environmental services') is chosen to protect this value. For example, can we rise above the current arbitrariness of concepts and techniques that emphasise Western concepts of value and price and start investigating their commensurability with local and indigenous valuations of ecosystem services? Can we clarify the way in which property rights and non-remunerative obligations to society are legally constructed under a variety of conditions? Or, can we take ecosystem valuation out of its economic isolation and value relevant ecosystem services jointly with affected populations, stakeholders and policy makers and development practitioners. The issue of intellectual property rights, both at the level of local populations and of international companies' research institutions and the appropriation of genetic resources are of comparative relevance here.

Environmental governance
A focus on governance implies attention for the ways in which local communities and supra-local entities, in cross-level interactions, manage the environment, especially in areas where poverty and vulnerable environments coexist. Institutions (i.e. social rules and the organisations that embody them) are the key to sustainability and the livelihoods of all who depend on the environment. In many cases supra-local institutions are increasingly intervening in local forms of resource management and environmental governance, thereby disenfranchising the local poor. The role of the state in these dynamics deserves special attention, especially in cases where the state is assumed to protect and enforce supra-local

and long-term interests (e.g. in joint management arrangements). 'Institutions for resilience' (i.e. for the mitigation and the recovery from shock events such as natural disasters) are part of this theme, as are institutions for the long-term survival of protected areas ('people and parks') especially where these are set in context of widespread poverty, competing claims and conflict. Here too an interdisciplinary approach is warranted. It can shed more light on the relevant societal and ecological parameters and processes that are, or should be, the object of governance processes. Attention should be given to the role of political instability and violent conflict, which are in essence also – disfunctional - forms of governance.

Interactions between spatial, temporal and organisational domains
Ecological and societal processes take place at various spatial and social levels. To understand and manage environmental sustainability it is of crucial importance to grasp the variety of 'vertical' and 'horizontal' linkages across the levels and domains of human (communities, nations, continents etc.) and natural (natural resources, populations, ecosystems, biomes etc.) organisation. This can be achieved either by using multi-scale models or by way of approaches that encompass all relevant linkages across the domains. The linkages from local actors and natural systems up to the supra-local levels of actors and systems, such as national and global politics and climate change, are especially interesting.

A methodological problem is posed by the fact that the natural system scale is usually the relevant level of analysis for natural processes, whereas the relevant units for the analysis of social processes are often of a different nature (e.g. composed of multiple actors and administrative boundaries). WOTRO is especially interested in research that explores the interplay between the natural and social systems.

D. Global Relationships[3]

Many scientists still hold to the view that developments in the West are central to global developments. Global relationships, however, concern phenomena that transcend national boundaries, they need to be addressed in a comparative framework. The proposed *Global Relationships* view recognises that global developments do not only originate from the West. Constructive research must be based on people and developments located in specific, if multiple, locations. It builds on an in-depth knowledge of such particular settings and their histories, while acknowledging the importance of trans-national relations and globalized flows. This perspective from the bottom up has to be complemented by a perspective from the top down. Naturally, the rise and fall of states and trans-national networks are of great importance for understanding changes at the global and local levels. Through interactions with outside forces and new global trends, local, social and cultural capital is produced, new forms of income, skills and work are constructed, and changes in cultural and religious identities take place. The *Global Relationships* research theme is organised around these two ideas, reflecting a vision of globalization and development that looks at specific as well as generalised flows.

Development and globalization: a bottom-up approach

The effect of the increase in trans-national relations, in the mobility of people and in the speed of circulation of goods and ideas is not always positive. These processes also have their downsides. Trans-national relations often build on the nation state. Mobility is not only highly selective, but it may well include forms of forced mobility and produces forms of immobility, unequal access and increasing inequality. Globalization is often seen as the dismantling of the barriers of protection around nations and states. But nationalist backlashes are common when it fails to prevent or even favours the free flow of threats to human security, from unregulated migration to drugs and terrorists.

WOTRO invites researchers to look at local manifestations of global developments in areas where these manifestations appear in terms of inequality, lifestyles, cultures and identity formation, social cohesion and social conflict, economic opportunity and survival strategies. It is important to note that local manifestations of events that occur world-wide (e.g. bird-flu, Carbon Dioxide emission, etc.) are being brought about by specific forms of 'agency' - acting that is carried out within social groups, categories and institutions that are actively pursuing their culturally constituted 'projects' rather than passively reacting, just in order to survive. The following more specific topics are examples of such research areas.

Conflict, Security, and Identity Politics
After the Cold War, identity issues became highly relevant for development each time a conflict along national, ethnic or religious lines undermined the political and cultural context of stability and 'good governance'. The 1990s and the early 21st century saw an increased volume of migration – both trans-national and domestic. This has created a deeper understanding of the fact that local processes are embedded in trans-national and global processes. What is 'local' is no longer confined to a particular place but is a construct of trans-national and global relationships. This realisation creates space for an extremely relevant research agenda inspired by the Millennium Development Goal addressing the objective of a global partnership for development. Because when it comes to development, we need more nuanced, empirically grounded analyses of cultural processes. Identity issues therefore deserve renewed research interest. They can be re-conceptualised in terms of larger societal and trans-national issues than before, and contextualised by broader development concerns.

Cosmopolitanism and Development
For over fifty years national and international organisations have been investing large amounts in combating poverty and in international development. Now, however, we can see that the results are often disappointing. One of the reasons for this is the size of the gap between the thinking of international organisations where a cosmopolitan elite shapes the poverty alleviation debate, and the thinking of those on the receiving end of the aid. Better insight into the thinking of the elite – who are represented by ministries, international organisations such as the World Bank and by multinationals – could contribute towards reducing this gap between agents and aid recipients. What processes determine the development of the manners of thinking and decision-making within international

institutions? How does the struggle against poverty stand up to their values? What links international civil servants to their countries and communities of origin, and how do these links function or change over time, and with what consequences for poverty alleviation? And how is the science regarding poverty alleviation structured?
These questions show that the international development society itself is an interesting area for bottom-up research.
Such research should not focus on the elite. Cosmopolitans working at low levels in the national systems perform a multitude of roles especially in brokering between the global and local domains (from the humble village "public letter writer" upwards). Understanding how cosmopolitan orientations are formed locally, how skills are acquired, and what purposes brokerage serves, would lead to important insights. It could explain why some development strategies work and others do not, or where low-level cosmopolitans are strategic in addressing (or prolonging) certain key inequalities (such as the emergent digital divide, or the emancipation of women).

Access to new global trends: a top-down approach

One of the most striking new features of the global era is global access to financial capital and information. It concerns almost all countries in the world, rich and poor. The parts of the economy that are internationally integrated through supply chains and networks, have to compete internationally. They are governed by global financial performance and accounting standards. On the other hand, international access to information 'connects' parts of societies to global information and knowledge networks, by means of new digital information infrastructures. This raises new questions linked to individual rights and national barriers to information. At the same time, large parts of the economy and of society remain deprived of such international access to capital and information. The emerging duality in economic structure and information access appears to be a common feature of this new global integration. Research into such growing gaps fills important needs in the understanding of global relationships.

Global access to markets
International trade is usually considered a prime engine of growth. However, lack of infrastructure, high risk and prohibitive transaction costs as well as restrictive trade policies limit market access either from the supply and/or the demand side. Under globalization, market entry for producers from developing countries is increasingly challenged by new barriers related to quality grades and safety standards that create selectiveness and reinforce exclusion. Regional trade cooperation between developing countries is also seriously hindered by tariff walls and Sanitary and Phytosanitary regulations. Local producers and consumers in developing countries rely on a wide set of different and often coexisting exchange arrangements - ranging from barter to futures – that are embedded in complex social networks of culture, trust and agency.

Global access to supply chains and delivery networks
Participation in (inter)national markets is increasingly governed through vertically structured supply chains and horizontally organised clusters and networks. Markets are conceptualised as a competitive arena of integrated companies and net chains, where complementarities

between public and private agents and competition between public and private grades and standards determine the competitive advantage. Dynamic interfaces between supply chains and networks are strongly influenced by trust and loyalty, requiring legal frameworks to guarantee contract enforcement. Innovative research regarding the role of markets and exchange configurations for enhancing the MDGs could focus attention on three key areas:

- Public policies for overcoming access constraints and selective engagement in market exchange (infrastructure provision, legal framework, market intelligence, property rights, training, etc) and their implications for inclusive poverty alleviation pathways.
- Institutional arrangements that 'make markets work for the poor', paying particular attention to the role of contracts, insurance and information for asset building and bargaining power.
- Strategies for linking producers and consumers, through local, regional and (inter)national exchange networks that reduce transaction costs and risk and enhance trust and social cohesion.

Global access to capital, insurance and information
The development of specific micro-finance tools for the more informal and less internationally integrated parts of the economy also appears to be of interest to local banks and other saving corporations, even those from rich, ageing, developed countries. Research into the growing gap between access to international financial markets and local financing needs would fill an important research and applied research need. In addition, attention should be paid to international risk insurance, which, apart from direct international trade and transport related activities, appears to be largely absent from international markets. This holds both for international commodities markets, where many developing countries depend heavily on raw materials exports for foreign exchange earnings, as well as for natural disaster risks. Similarly, research appears to be needed more than ever into the global aspects of open access to information versus the filtering and manipulation of information, on the digital divide, the rules and regulations with respect to intellectual property, the influence of global media, and their relationship to democracy and human rights.

Annex C. References, background documentation

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- EU Life Science research policy, including developing countries and health research: www.cordis.lu/lifescihealth/
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- Convention on Climate Change; unfccc.int/2860.php

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