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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

The EU –- a global partner for development
Speeding up progress towards the Millennium Development Goals

Policy Coherence for Development

Climate Change/Energy/Biofuels, Migration and Research

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Executive Summary

Beyond development cooperation the EU has an impact on development and the attainment of the Millennium Development Goals (MDGs) through both its external and internal policies. Attention to the external impact of EU policies beyond development has increased within EU institutions and the growing importance of Policy Coherence for Development (PCD) aimed at building synergies between those policies and development objectives is widely recognised. This is reflected by the many PCD mechanisms put in place at Member State, EU and Commission levels.

This Staff Working Paper provides elements for exploring and strengthening the development potential of climate change/energy/biofuels, migration, in particular brain drain, and research policies with development objectives.

Climate Change/Energy/Biofuels

A key element in the EU´s strategy regarding climate change, as reaffirmed by the European Council of March 2007, is the EU's long term commitment to the development of renewable energies beyond 2010. Among renewable energies, biofuels are of particular relevance to the Policy Coherence for Development perspective.

The European Union should help developing countries to benefit from the opportunities created by the biofuels market for fighting poverty, while maintaining careful monitoring of the impact it can have on third countries, in particular in terms of food security, access to land and the environment. Against this background, one of the recommendations proposed is regular monitoring of the European biofuels policy fully including the development dimension and allowing, if deemed necessary, adjustments to be made to the policy. Other recommendations are made to support the EU approach based on sustainability criteria, emphasising that implementation mechanisms remain accessible to poor countries and producers, seeking a progressive convergence with international standards, and facilitating biofuels trading, in particular with the poorest countries. Finally, favouring research in the EU and in developing countries, on production and transformation options relevant to the developing countries and on second generation biofuels, as well as facilitating technological transfers are two key pillars of a development friendly EU biofuels policy.

Migration

Any European policy on structuring and managing migration intertwines by definition with development policy: migration impacts on development and development has an impact on migration. There are several issues that would merit further consideration in the context of promoting coherence between migration and development policies. However, this chapter concentrates on what are often considered the most pressing and visible PCD challenges in the area of migration: brain drain and 'brain waste'. Various measures to address the PCD challenges related to brain drain are explored. To ensure sufficient numbers of highly skilled workers in developing countries, 'training for export', may be an appropriate strategy, with additional benefits. The retention of skilled workers should be better integrated within national development strategies and could be usefully incorporated into the existing political dialogue. To facilitate temporary or permanent return, more efforts could be made to allow for the 'portability of acquired social rights', notably equal rights as regards the export of old age pensions. To further enhance 'ethical recruitment' and in order to protect brain-drain-sensitive sectors in a legally binding context, the conclusion of comprehensive employment agreements could be considered. Finally, as a further incentive to circular migration, ways of simultaneously enhancing the ties and the migrants' sense of belonging towards their host

country and their country of origin, should be further explored, including analysing citizenship schemes and the option of dual nationality.

Research

The Commission proposes to define a strategy of research for development building on and learning from past efforts with a view to better coordinating efforts in this area at European level. The Commission believes that better coordinated European research for development and capacity building through aid would improve coherence and effectiveness. Within the context of the EC Research Framework Programmes, Specific International Cooperation Action (SICAs) are intended to address the particular needs of developing countries and emerging economies by means of dedicated cooperative activities on a partnership basis so as to increase collaboration on topics directly related to the MDGs in areas such as agriculture, health and health systems, including reproductive health, poverty related diseases and neglected diseases, renewable energies and water. The Staff Working Paper puts forward concrete recommendations to better use this potential including through a reinforced dialogue with developing countries to identify priority topics for development based on existing national and/or regional plans. These initiatives will be accompanied by development cooperation measures to strengthen research capacities in developing countries through complementary aid activities, which should be defined in the near future.

1. INTRODUCTION

Policies other than development cooperation have a strong impact on developing countries. The European Union (EU) concept of Policy Coherence for Development (PCD) aims to build synergies between those policies and development objectives. This in turn will increase the effectiveness of development aid. Against the backcloth of the EU's commitment to substantially increase official development assistance, the importance of ensuring that these resources are not rendered inefficient or wasted by policy incoherence is even greater.

The policy framework[1] that serves as a reference was set in 2005 when the EU made PCD commitments in 12 policy areas[2]. In September 2007 the Commission issued the first EU biennial report on PCD[3] to assess progress towards these commitments. It presents an analysis of organisational mechanisms put in place by the Commission and Member States both individually and jointly. For each of the 12 PCD policy areas as well as for the organisational mechanisms the report identifies a number of outstanding issues that need to be followed up to ensure more coherence. With the report the EU has for the first time gathered all the different pieces of information on PCD from various sources under a single umbrella.

In its conclusions on the PCD report, the Council invites Member States and the Commission to continue monitoring and improving PCD in the 12 policy areas. At the same time the Council notes with satisfaction progress in certain policy areas such as trade, agriculture and

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1 - Commission Communication on ´Policy Coherence for Development – Accelerating progress towards attaining the Millennium Development Goals´ - COM(2005) 134 of April and May 2005, General Affairs and External Relations Council (GAERC) Conclusions on the Millennium Development Goals (Doc. 9266/05),
- The European Consensus on Development,
- PCD Council Conclusions, November 2007 (Doc 15112/07).

2 Trade, Environment, Climate Change, Security, Agriculture, Fisheries, Social dimension of globalisation, employment and decent work, Migration, Research and innovation, Information Society, Transport and Energy.

3 EU Report on Policy Coherence for Development - Commission Working Paper COM(2007) 545 and Commission Staff Working Paper SEC(2007) 1202.

fisheries, while noting that the development potential of areas such as migration, security, climate change, energy, environment and research should be further exploited.

Following the adoption of the EU PCD report and the related Council conclusions, the Commission will continue to monitor the 12 EU PCD areas paying particular attention to the outstanding issues identified in the report while continuing its efforts to promote PCD, in close consultation and collaboration with the Member States.

This Staff Working Paper focuses on three areas with room to improve their development potential. These areas are climate change/energy/biofuels, migration, in particular brain drain, and research policy. The paper aims to identify concrete orientations and measures to implement the 2005 PCD commitments in these selected areas.

The Paper was prepared following a consultation process including dialogue with civil society organisations, an online consultation process with the public at large and meeting with Member States through the Informal PCD Network. The Commission also organised a two day Policy Coherence for Development Workshop with a diversity of participants from Africa, the Caribbean, Latin America and from European countries, from civil society organisations, diaspora organisations, research centres, governmental institutions and private sector.

Migration and Climate Change/Energy/Biofuels areas are characterised by a high level of uncertainty and future evolutions will require careful analyses of ongoing experiences in various countries by various interested parties. It is therefore essential that future findings, data and analytical works are considered in order to adapt and refine, if deemed necessary, the policy options proposed in this Paper.

As policy formulation in the three areas is an ongoing process, there is a need for continued policy dialogue between the EU and developing countries so as to support them in their responsibility to create a safe and conducive political, social and economic environment. Contributions to this dialogue from all stakeholders, including civil society organisations, remain crucial. Support in the form of capacity building measures, dissemination of information and good practices could also be provided to improve the positive interactions between different policy measures and development policies.

2. POLICY COHERENCE FOR DEVELOPMENT: CLIMATE CHANGE/ENERGY/BIOFUELS

2.1. Background

Climate change and energy were identified in 2005 as two of the 12 EU policy areas with a potential impact on developing countries (DC). A key element in the EU's strategy to fight climate change, as reaffirmed by the European Council of March 2007, is the Community's long term commitment to the development of renewable energies beyond 2010. Among renewable energies, biofuels are of particular relevance to the Policy Coherence for Development (PCD) perspective given the level and timeframe set for biofuels use in the EU and the comparative advantages of tropical areas for some biofuel production. With biomass, they are currently the only widely tradable renewable energy source, and as a consequence the EU biofuels policy[4] will influence the production and markets of these products, and of their agricultural feedstock, in the EU as well as in developing countries. The first EU PCD report

[4] "An EU Strategy for Biofuels" - COM(2006) 34 - as well as the recent Commission proposal for the Member States to achieve at least a 10% share of renewable energy (primarily biofuels) in the transport sector by 2020 - COM(2008) 19.

issued in 2007 identified biofuels as an area for further work, in particular with regard to balancing opportunities and risks, developing a sustainability mechanism and promoting relevant research and studies[5].

In the context of the rapid world-wide growth of biofuels and the intense debate on their potential impacts on development, this Paper is a continuation of the Commission's PCD work on the issue. It is an area in which Policy Coherence can add value by considering the multidimensional aspect of the policy making process and providing policy options to make relevant policies development friendly.

The Commission tabled on 23 January 2008 a proposal for a comprehensive Directive[6] to promote the use of energy from renewable sources, including biofuels. In this context, whilst the Commission is already working with the MS on developing methodological approaches to further incorporate climate change mitigation and adaptation into our assistance programmes and on increasing funding of related activities, it is important that the development implications of biofuels policy are further analysed and taken into account. To ensure PCD in the area of biofuels, not only are the EU development, energy and climate change policies concerned, but also its environment, trade and research policies.

This Paper explores a number of issues and provides practical policy options in order for EU biofuels-related policies to be development friendly.

2.2. Challenges and Opportunities of EU Biofuels-Related Policies

2.2.1. Policy Context

The production and use of biofuels have taken off dramatically in the past few years. Between 2000 and 2005, global ethanol production more than doubled, whereas biodiesel production quadrupled. This growth is expected to continue. In terms of PCD, it is important to analyse biofuels demand within overall agricultural demand (food, feed, fuel and fibre), and EU biofuels demand within global biofuels demand. Detailed analyses of possible impact of biofuel promotion have been conducted by the Commission[7] and serve as general background for this Paper.

Aiming mainly at reducing GHG emissions and at improving energy security, the EU has put in place legislation promoting biofuels use, by fixing targets for the share of biofuels in total transport fuels in the "Biofuels Directive" of 2003[8], by strengthening them in the "Renewable Energy Roadmap"[9] of 2006 endorsed by the European Council of March 2007[10], and in the recent Commission proposal of 23 January 2008. This proposal aims to establish in the EU an overall binding target of a 20% share of renewable energy sources in energy consumption and a 10% binding minimum target for biofuels in transport by 2020. Although EU biofuels production could in theory be sufficient to fulfil that target, the Commission has taken the view that a balanced supply of domestic production and imports is desirable, in particular with the aim to reach its targets in a more cost-efficient way, and to improve the EU biofuels policy contribution to climate change mitigation. With the same aims, there might be incentives for second generation biofuels[11]. Finally, a key intrinsic element in the EU biofuels

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5 COM(2007) 545 and SEC(2007) 1202.

6 COM(2008) 19, 23.1.2008.

7 In particular in Staff Working Paper SEC(2006) 1720 "Renewable Energy Road Map- Summary of Impact Assessment" (10.1.2007) and in COM(2006) 845 "Biofuels Progress Report (10.1.2007).

8 Directives 2003/30/CE and 2003/96/CE.

9 COM(2006) 848.

10 Council Document 7775/1/06 REV10.

11 Second generation biofuels are produced from wastes, residues and cellulosic materials.

policy is the conditions relating to environmental sustainability of production of biofuels used for the EU market (in terms of biodiversity and greenhouse gas emissions).

2.2.2. Opportunities

Biofuels can, if well managed, create new development opportunities for developing countries in relation to the attainment of the Millennium Development Goals.

- **Opportunities: Climate Change, Mitigation and Incentive to Sustainable Production.**

The setting in the EU of targets for biofuels use, under the current assumption that net green house gas savings will materialise, is expected to be positive for developing countries too, as any climate change mitigation measure will benefit in particular countries more vulnerable to climate change, namely the poorest developing countries and the island states. To ensure that it does not unwittingly encourage those cases where biofuels production actually has a negative greenhouse gas (GHG) balance, EU biofuels policy has laid down safeguards in the form of a threshold of 35% GHG savings for biofuels to receive any support and be counted with regard to targets and renewable energy obligations.

A potential positive impact of the EU biofuels policy on DCs could come from the sustainability scheme, proposed by the Commission to encourage only environmentally sustainably produced biofuels. The scheme contains in particular provisions to restrict certain types of direct land conversion for producing biofuels feedstock while the effect of the policy on indirect land conversion remains debated. Moreover, since land use legislation normally applies nation-wide, and since agricultural production is generally not differentiated according to markets (feed or fuel), the EU sustainability scheme may have a multiplier effect on the whole agricultural sector. In order to comply with requirements for the EU biofuels market either countries will have to ensure that land use legislation is sufficiently robust or producers will have to make sure that their land use practices are sustainable. The proposed scheme can be seen as a signal for developing countries governments, but also other actors. It can raise awareness and give an incentive to develop similar standards in other parts of the world, not only for biofuels, but for other commodities as well.

Finally, biofuels feedstock cultivation in DCs, possibly encouraged directly or indirectly by the EU biofuels policy, could have positive environmental impacts in relation to sustainable land use in cases where: i) degraded or semi-arid land is put back under vegetation cover, by planting adapted species; ii) feedstocks cultivated using good agricultural practices actually contribute to soil conservation (especially with permanent crops or legumes).

- **Opportunities: Socioeconomic Development and Poverty Reduction.**

Growing EU biofuels demand can provide new market opportunities for DCs. This concerns production and exports of biofuels and of their agricultural feedstocks. With regards to EU market opportunities, DCs will benefit proportionally to their export capacity. This depends on actual and potential arable land, agro-climatic conditions, the competitiveness of their agricultural sector and supply chains[12], as well as on the EU import regime, its environmental sustainability requirements and technical standards.

More favourable agricultural market conditions can represent an opportunity for most LDCs, since three quarters of their population live in rural areas[13], mostly relying on agriculture for food, income and employment. However, beyond a general analysis, it is necessary to

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12 Production potential has to be considered also against the backcloth of second generation biofuels and can hence allow for less agriculturally favoured areas to be involved in production.

13 UNDP 2006 Human Development Report – 26.3% of the LDC population live in urban areas (2004).

recognise conflicting interests, among countries (net agricultural exporters vs importers) and among population groups (producers vs. consumers).

The development of an international biofuels market, to which EU policy will contribute, can also be an incentive for the creation of domestic markets in DCs, especially for countries where such domestic markets are small and would not attract investment on their own. The combination of overall stimulus to agricultural production, and domestic and export markets for biofuels, if supplied by local sustainable production, can provide a country with significant benefits in several areas:

– Energy security at national level, with a higher proportion of indigenous energy supply, but also improved access to energy at local level, with decentralised energy production units.

– Rural development and poverty reduction in rural areas, which are critical for reaching the Millennium Development Goals in many DCs, where poverty rates are high. New markets through biofuels development might lead to increased productivity, more profitable and diversified agricultural sectors, the creation of value adding industries in rural areas, more rural employment and reduced migration to urban centres. The redistribution of the expected increased wealth will depend on the economic and social models[14] in countries.

– Improvement of the macro-economic situation, in particular as regards the trade balance and the balance of payments, by reducing rising oil import bills and raising foreign exchange earnings.

2.2.3. Risks

While biofuels can be seen as an opportunity for many developing countries, potential hazards should not be underestimated. Mitigating these risks will depend on production models, the rate of market development, as well as on international and national policies ensuring that agricultural or biofuels growth is steered towards development friendly outcomes. While none of the risks specified below can be attributed to the EU biofuel policy, they can be particularly critical when demand growth rates are unusually high, as is the case for several agricultural products, due among other factors to the EU biofuels market.

- **Risks: Climate Change, Biodiversity and Other Environmental Risks**

Increasing prices and profitability of agriculture are incentives to increase agricultural production. This may be done through yield increases but also through expansion of land under cultivation - possibly at the expense of forests or other natural ecosystems (directly or indirectly). If this happens, this tends to negatively affect biodiversity and, in the case of forests or other high carbon stock lands, this generates new emissions of green house gas (a fraction of which is off-set by the carbon sequestration of the new crops). In addition, the sustainability criteria could also lead countries to use good arable land for biofuels production while expansion on arable land of lower quality and poorly managed agriculture could take place on the rest of their territory.

Poorly managed agriculture, notably when there are incentives to increase yields on the short term, may cause environmental problems of local or regional scale, such as soil degradation or water pollution and depletion. Concerning soil impacts, a number of DCs already face a serious problem in soil organic matter depletion in many of their agricultural regions. Inappropriate agricultural practices coupled with an increase in average temperatures have progressively reduced the amount of organic matter in soil. This decrease in soil organic

[14] Such as large plantations, independent producers and/or outgrowers; type of contract or relation between suppliers and factory; production techniques influencing labour intensity; working conditions.

matter leads to problems of erosion control, water conservation and soil fertility, with their consequences for subsistence farming. Furthermore, it causes the organic carbon it contains to be released into the atmosphere.

Potential environmental impacts also exist in the processing phase, if management standards are not state-of-the-art. Insufficient waste management for palm oil production is one example. The degree of environmental impact of the biofuels sector will depend on its management practices, requiring appropriate technology, capital and know-how, as well as on policies and legislation (most often at national or regional level) providing regulatory frameworks for soil and water protection.

- **Risks: Socioeconomic Development and Poverty Reduction.**

The EU biofuels policy, by contributing to creating an international market for biofuels, is indirectly an incentive for certain developing countries to implement biofuels policies for domestic use in substitution for oil. Such policies in DCs generally make it possible to reduce oil related expenditures, but on the other hand may require specific public expenditures (incentives, subsidies, etc.). The balance between both must be evaluated by each country in the context of its own potential and macroeconomic situation, taking into consideration alternative uses of biomass as well.

Higher international agricultural prices, partly due to competing food and fuel uses of agricultural products or of arable land, create both winners and losers amongst developing countries and within. For poor consumers in urban areas, and those poorer farmers who are net food buyers, rising prices already render their access to food more difficult. Rather than the availability of food, it is the accessibility dimension of the food security equation which may be jeopardised due to less affordable prices. At macroeconomic level, the Low Income Net Food Importing DCs can particularly be affected by an increase in their food import bill, especially when they have low foreign currency reserves and no high-priced commodity exports.

The development of a new sector/market or a sudden surge in profitability of a sector tends to exacerbate land tenure tensions, in general at the expense of the more vulnerable local communities – with consequences not only in terms of justice but also of poverty (e.g. loss of livelihoods, forced expropriation). The increased demand for land may also lead to increased corrupt practices in land management and can constitute an obstacle to the establishment or implementation of fair and transparent land tenure legislation.

The extent to which potential risks of biofuels growth in developing countries are distributed among stakeholders largely depends on the production model in the country. The latter is in turn influenced by international trading conditions, i.e. the EU market. Market and trading conditions, such as import tariffs, technical standards, or environmental criteria, indirectly influence the type of agricultural feedstock demanded; and different agricultural sectors tend to have different production structures, hence different social impacts. Trading conditions also impose certain levels of complexity and administrative costs for the supply chain. The higher this level, the fewer producers and producing countries will be able to participate in the international market. In addition to capacity building of the weaker stakeholders, it is important that this risk be kept in mind when establishing, i.a. in the EU, these trading conditions.

2.2.4. The Food-Fuel Debate

The above sections on opportunities and risks of biofuels show that their potential impact on food security can be both positive (in particular through increased income for certain population groups in rural areas) or negative (mainly through reduced food affordability for

poor consumers). Food security problems most often stem from a complex combination of obstacles for the poor to access food (too low income, too high consumer prices). Although the linkages between global biofuels demand - and in particular EU biofuels demand - and local food security concerns are difficult to quantify, it is important to assess how certain policy measures could reduce the risks.

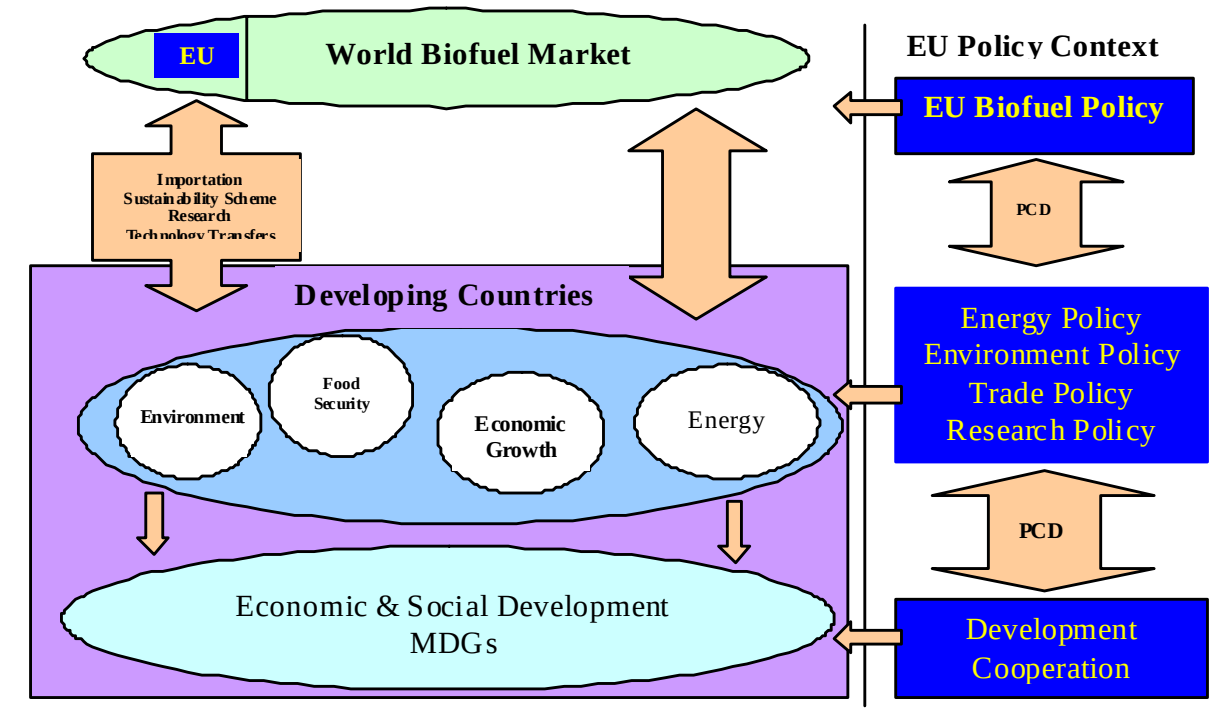
The type of feedstock being used influences the food-fuel link. Developing countries may choose either to base biofuels production on increased production of food crops (this will make it possible, in case of insufficient supply, to cut back on biofuels demand of the feedstock to ensure availability for the food market); or to link biofuels production to non (staple) food crops so as to avoid reducing availability and rising prices of food crops. The later approach was chosen for example in the South African biofuels and the Indian biodiesel policies. Biofuels policies in developing countries should be fully coherent with their agricultural and food security policies within the overall context of national poverty-reduction policies.

In the medium-long term, taking into account the possible positive impact on productivity of an increased demand for agricultural commodities, an adequate food-fuel balance could be attained by setting up a favourable framework for investment and actually investing in agricultural sector. This would lead to higher efficiency and improved competitiveness.

The higher the productivity of a feedstock, the less it will compete for land with food; until second generation biofuels are commercially available, sugar cane, for instance, seems particularly well placed. In addition, sugar being mostly an industrial product, the food-fuel dilemma is less direct than in the case of staple food. As mentioned above, the definition of market and trading conditions for the EU market, such as import tariffs, technical standards, or environmental conditions, indirectly influence the type of agricultural feedstock in demand.

2.3. The PCD Dimension: Multifaceted Policy Making Process

Policy Coherence for Development in biofuels policy is of particular relevance. The diagram below attempts to summarise the links between policies in the EU (right side of the chart) and the situation in developing countries (left side of the chart). While PCD is seen as an instrument to promote development friendly policies, each policy identified has an impact at different levels: on the world biofuels market, on specific sectors, on overall MDGs performance. The left side of the chart illustrates the impact of the world biofuels market, of which the EU represents a fraction. Through importation, environmental sustainability scheme, research and technological transfers, the EU contributes to the overall main impact on developing countries in terms of environment, food security/agriculture, economic growth (business development, macroeconomic impact) and access to energy, among others. The impact on these sectors will in turn affect the overall economic and social development of the country and its performance in terms of MDGs.



2.4. The Way Forward

The overall analysis shows that, under certain conditions, production and use of biofuels can, if well managed, provide development opportunities for DCs. In that context, the EU should aim to support relevant DCs to enter this market, in such a way as to maximise its benefits while addressing its risks. This is valid only for DCs with a potential for competitiveness on selected markets, and where there is a certain level of capacity to design and enforce policies which encourage environmental and social sustainability.

Encouraging DCs in this objective requires first to ensure that internal EU polices are supportive of it; therefore, several policy options could be considered, classified hereunder in policy areas according to their main intended impact (although side effects in other policy areas may be as important). In parallel, with an international and EU policy environment as supportive as possible of DCs in that field, development cooperation can facilitate in-country strategies to develop while ensuring environmental, economic and social sustainability in that sector.

Against this background, in order to enable developing countries to benefit from the potential opportunities created by EU biofuels policies and reduce the risks, a number of EU policies could reflect upon certain adjustments which could help to accommodate developing countries specific concerns.

2.4.1. Energy Policy Options

- **Reporting, with a Significant Development Component.**

Monitoring and reporting are keys to the success of any policy, but even more in the case of a policy such as biofuels, which has complex inter-linkages with many development dimensions, which relates to a quickly changing sector, and for which data and information

are rapidly evolving. The monitoring and reporting in the Commission's proposal for the biofuels sustainability scheme pays particular attention to developing countries with regards to sustainability, food security, land use, and dialogue and exchange of information concerning the implementation of the biofuels sustainability scheme.

In order to maximise the PCD dimension in the reporting mechanism, which will apply the Commission's well established PCD procedure, namely the Inter Service Consultation, it is necessary to ensure the availability of data and means to produce meaningful findings. For this purpose, it could be useful to entrust the task of monitoring key biofuels related developments to institutions with the required expertise in Europe and in developing countries (a "Biofuels Observatory"); this work would feed into the policy reporting requirements bestowed upon the Commission.

The regular monitoring and reporting as proposed by the Commission would also generate a debate at EU level and beyond, within DCs, with developing countries representatives, civil society groups and experts, thus highlighting the development implications of policies and contributing to further enhance its compatibility with development objectives.

- **Promoting Technological Transfer and Innovation for the Benefit of Development.**

In a first stage, technology should generally not be a major obstacle for DCs to engage in biofuels production, processing and exports, especially for the agricultural feedstocks or for ethyl alcohol, which many already produce. However, keeping up with technological advances is always a challenge in developing countries, and is necessary to improve competitiveness and mitigate environmental impacts. This will be especially true for second generation biofuels technology.

Several policy instruments could be used to promote technological innovation and transfer for the benefit of development in the field of biofuels:

- Research to develop efficient, adapted, and environmentally friendly technologies. South-south technological transfers have special potential to be better adapted to developing countries' needs. In line with the policy options proposed in the research section of this Paper, EU research policies and instruments should be put to good use for that purpose.
- Facilitating trade in sustainable biofuels related technologies.
- Promoting sustainable Foreign Direct Investment through general investment climate friendly measures, the creation of regional biofuels markets, and access to capital. This is fully in line with the EU's support for regional integration in DCs. The EIB Investment Facility for the ACP can be a useful instrument for that purpose.

2.4.2. Environmental Policy Options

- **Sustainability Standards Associated to Biofuels**

All potential environmental, economic and social impacts are important for sustainable development. However, there are different instruments for different policy goals and certification of sustainability standards along the biofuels supply chain is not a silver bullet which will tackle all the environmental and social problems of agriculture, which have long been in existence.

Because biofuels are not good or bad for the environment *per se*, but depending on their production process and the scale of cultivation, including cultivation of feedstock material and land use change, it is important to associate environmental sustainability standards with

biofuels as a *sine qua non* condition for supporting their use. The sustainability scheme is a response to this need. In addition, the monitoring and reporting by the Commission foreseen in the proposed directive provides an opportunity, if appropriate, to propose corrective actions, based on lessons learnt during the implementation of the scheme.

Hereunder are some considerations regarding the design of future standards from a development perspective:

- The scope and modalities of an environmental sustainability scheme should be designed in such a way that it is applicable and affordable by the supply chain. This argues in favour of a limited number of criteria, clearly linked to the production process, including cultivation of feedstock material and land use change, and simple and flexible implementation modalities.
- Not only is applicability a concern for mainstream stakeholders in biofuels production and trade, as stated above; it is also critical for weaker players, notably less developed countries and smaller producers.
- Harmonisation at international level is a key element in applicability and affordability of standards.
- Sustainability standards should not discriminate between domestic and imported supplies of biofuels or their feedstocks, both for WTO compatibility and PCD reasons.
- Sustainability standards should be WTO compatible, not only to respect international trade obligations, but also to avoid a rejection of the scheme, which would mean the loss of an instrument whose purpose is to promote environment sustainability.

While future orientations for the EU scheme are debated, developing countries should be encouraged to move towards sustainability schemes promoting the use and production of sustainable biofuels with a view to enhancing coherence between EU and DC policies.

EU efforts towards convergence of sustainability aims and standards within the EU and at international level, i.e. through the International Biofuels Forum and eventually more inclusive fora, should by no means be relaxed.

In addition to development friendly sustainability standards, DCs may need support to build capacity to implement them. While existing equivalent voluntary schemes and national legislations can be recognised by the Commission as demonstrating that biofuels have been produced in compliance with the environmental sustainability criteria, additional efforts are required to put this into practice in order to speed up implementation of the scheme in DCs willing to engage in biofuels production.

- **Further Efforts to Promote the Implementation of Multilateral Environmental Agreements and Internationally Agreed Labour Convention and Social Standards**.

In addition to the environmental sustainability scheme, all available instruments for promoting sustainable production of biofuels should be used, such as Multilateral Environmental Agreements and internationally agreed Labour Conventions and social standards, as well as mainstreaming of environment and human rights into development assistance to DCs.

2.4.3. Trade Policy Options

These new markets created by the EU biofuels policy will represent an opportunity for DCs only if the EU trade regime, its environmental sustainability requirements and its technical standards allow DC exports to enter the EU market.

- **Facilitating a Balanced Supply of the EU Biofuels Market**

Recognising that supplying the EU biofuels market partly by means of imports will contribute to improving the cost effectiveness, GHG impact, and development opportunities of its biofuels policy, the EC is committed to a balanced approach between imported and domestic supplies. Future trade policies should therefore be adjusted, if appropriate, to reflect this objective.

- **Maintaining a Margin of Preferential Access for Least Developed Countries (LDCs).**

At present, developing countries eligible for the Everything But Arms (EBA) and enhanced Generalized System of Preference (GSP+), as well as the African, Caribbean and Pacific country signatories to Economic Partnership Agreements (EPA), benefit from duty free quota free access to the EU for biofuels and for most of their feedstocks.

A "balanced approach" to supplying the EU market should also mean seeking a balance between third country suppliers, if development opportunities of an expanding EU biofuels market are to be shared. Because of significant constraints to competitiveness faced by the Least Developed Countries, this would require safeguarding a certain margin of preferences for biofuels for LDCs in the multilateral and/or bilateral trade negotiations in which the EU is engaged.

- **Reviewing Non-Tariff Barriers**

Technical fuel standards and a number of other technical measures can have an impact on different biofuels and biofuels feedstocks, to different degrees, and may affect the balanced approach favoured in the EU. The EU should conduct a thorough assessment of such measures and standards and if relevant review them to ensure that they do not negatively affect DC access to the EU Market.

- **Intellectual Property Rights.**

In the context of biofuels, the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement under the World Trade Organisation is of great interest to developing countries where new plant varieties and technological systems to process feedstock could be developed as a result of the opportunities offered by the growing biofuels market. WTO agreement on intellectual property right is essential to encourage innovation and research, in particular in relation to the second generation biofuels, and offers opportunities to the private sector in developing countries to lead market development. In the LDCs, these developments could be assisted by DCs and EU firms or institutes or, alternatively, by DC and EU research programmes.

- **Minimising Trade Distortion by Domestic Subsidies.**

Within the framework of the Common Agricultural Policy and state aid, it is critical to analyse the global effect of domestic subsidies and, if these subsidies are deemed necessary, to identify and implement those support measures that distort trade the least of all.

2.4.4. Research Policy Options

Biofuels science for production and processing is a relatively recent domain of research, although studies and testing can be traced back to the early 20th century. Research for

development has the potential to make a major contribution in the area of biofuels. As a result, research policies in the EU should be geared toward biofuels issues both in the interest of the EU and the developing countries.

- **Broadening the Range of Biomass Sources for Energy Use**.

Biofuels can be produced from a wide variety of natural products. However current technological development mainly considers a handful of crops to be the source of biofuels; but many often little-known species may have an interesting potential for biofuels production, while being adapted to a broader diversity of production conditions. EU research programmes, in collaboration with international institutes in the developed and developing world, should undertake an inventory of available biomass suitable for biofuels production, taking into consideration the various ecosystems. Such research should also cover the potential of enhanced forms of biomass through crop improvements. The design of such research, as well as its outputs, should be made public and debated with all relevant stakeholders in DCs and developed countries, in order to target their priorities, to integrate sociocultural factors within technological packages, and to ensure that risks and opportunities in relation to a given crop or technology are well taken into account.

In this context, research should cover not only biofuels for transport, but also local uses of biofuels in DCs, and more broadly biomass for energy, to promote local access to energy.

- **Supporting Research on Biofuels Production, Processing Option and Second Generation Biofuels**

Scientific and technological challenges to produce biofuels at competitive prices require further research. Research objectives of particular relevance to developing countries, to be tackled in and with DCs, may include: increasing of crop yields (not only to improve profitability for the farmer, but also to reduce the risk of production expansion through land conversion, which could have higher impacts on the environment and on food security); improving adaptability of selected biofuels feedstocks to marginal lands and more difficult production conditions (to expand overall agricultural production levels to the benefit of food security, and to open up new opportunities also for farmers in less favoured areas); improving of processing to create new products (i.a. for non transport use such as cooking oil for domestic use to replace wood and charcoal use in DCs); improving the greenhouse gas balance of biofuels production pathways.

Work on optimisation of production should be conducted, of relevance to the variety of conditions found in developing countries, with a view to improving the environmental impact of agriculture, via i.a. more efficient water use, optimisation of fertilisation and plant protection techniques, soil conservation, and protection of biodiversity.

Research programmes should seek to improve the energy and greenhouse gas balance of biofuels production pathways of interest to DCs. They should also contribute (by determining technical standards– such as green house gas emission savings ratio, blending ratios, production modalities, etc.) to help DCs to comply and demonstrate compliance with the sustainability scheme of the EU biofuels policies.

Finally given the high potential of second generation biofuels and the need for applied research in this field, these should be supported not only through energy policy, but also through additional research efforts, with again a significant focus on feedstocks and production pathways of interest to DCs.

In all research fields, public private partnership can help to enhance the potential return of research investments.

- **Promoting DC Expert Participation in Scientific/Technical Networks on Bioenergy.**

The potential for south-south and north–south cooperation in research programmes is important. Research programmes in Europe should promote the participation of researchers

from DCs in international initiatives. These interactions should be promoted within academic and public research institutes, as well as with private research institutes and research departments of private companies, whose role is essential in the development of biofuels. In that context, expertise in a number of emerging or developing countries, such as India, South Africa, Brazil, Indonesia and others can be put to fruitful use.

- **Promoting the Use of Research Results in Policy Making.**

The accumulated knowledge and science on biofuels issues should serve the purpose of policy making. Mechanisms for feedback loops should be established between the scientific community on the one hand and policy makers on the other. Participations by the research community in monitoring biofuels policy would be a key element to this end.

While a number of developed countries already have a biofuels policy in place, these are lacking in most DCs and in particular LDCs. Even where potential for biofuels production seems to exist only a handful of countries have already put in place biofuels policies that will allow them to improve their energy situation and benefit from market opportunities. In addition to the national level, biofuels policy in DCs can benefit from regional and possibly continental dimensions, to enable countries with small markets to also harness their opportunities, and at international level to partly match the weight of other key players in the sector. In order for research findings to feed into policy making in DCs, support should be provided for developing countries in accessing information and in designing sound biofuels policies, embedded within the broader context of their energy policy (including renewables and in particular biomass), and coherent with other policy areas (agriculture, food security, environment, fiscal policy, etc.).

2.4.5. Development Cooperation Accompanying Measures

In order to maximise the benefits of the proposed policy options under the four key policy areas above, the development cooperation programmes of the EU should accompany and enhance synergies with these recommendations in order to foster a positive development impact and poverty reduction. Numerous development initiatives, by a number of development partners, already exist in the field of biofuels, and due to the multi-dimensional linkages of biofuels, several existing development instruments can be used in this context. Coordination at the multilateral level as well as with the most important international partners will be of paramount importance. The support options identified below should take this into account, and be implemented with special attention to aid effectiveness principles.

As regards biofuels and **food security**, the new food market conditions, influenced i.a. by biofuels, should be integrated within the food security policies and instruments of DCs, the Commission and Member States. Development assistance could support dialogue with DCs on the issue of agricultural prices and their impact on development. Providing state of the art information and in depth analyses of the issues at stake is an important step. A dedicated forum gathering policy makers from DCs, biofuels producers and other stakeholders, international development partners as well as civil society organisations and private sector actors could be set up, linked to existing fora, to ensure careful attention is paid to food security in DCs, in particular in LDCs and for the poorest groups in other countries, in the developed as well as the developing world. In terms of policy making, especially in countries with biofuels potential, the design and implementation of national food security policies should be adapted to reflect the current knowledge on biofuels issue (risk, opportunities etc.), thus ensuring that a proper balance is obtained between the opportunities and risks of biofuels sector development.

In the field of agriculture, development partners could support the design and enforcement of national policies contributing to (1) better access of small producers and poor areas to national and international markets, and (2) safeguarding livelihoods of vulnerable rural inhabitants or communities. Moreover, development programmes could be used to assist integrated projects of local production and use of biofuels.

In the field of **energy**, support could be provided for: i) a thorough analysis of the pros and cons of national biofuels policies, in the more global context of national energy policy (including renewables and in particular biomass) and integrated into the development strategy of the country; ii) in relevant DCs, the design of sustainable renewable energy policies, i.a. to facilitate, where relevant, the contribution of biofuels to improve local access to energy. The preparation of these policies, which should ensure better access by small producers and populations in poor areas to national and international markets and safeguard livelihoods of vulnerable rural inhabitants or communities, could be supported with technical expertise and exploitation of research results.

With regard to technological transfer, EU energy programmes could be instrumental in assisting sustainable biofuels production initiatives. Partnerships could be established between EU or non EU public investors (such as EIB, development partners…), national government in DCs, private sector actors and local communities to promote production of biofuels for local use as well as export.

In the field of **environment**, development policies could support the design and enforcement of national policies for sustainable land use (including land tenure), and the implementation of Multilateral Environmental Agreements. At international level, support could be provided to identify and, if relevant, develop complementary incentives for DCs to avoid conversion of land with high carbon stock and high biodiversity. DC representatives should also be encouraged to participate in standard setting at international level.

As far as **trade** is concerned, aid for trade should also cover the different needs of DCs for a dynamic biofuels export sector to develop, where relevant.

As regards **social issues**, support could be provided for the design and enforcement of labour policies promoting decent work, as well as the implementation of related international conventions, in particular in the agricultural sector. In addition, examples of national policies/programmes specifically designed to enhance the social developmental impact of the biofuels sector exist, such as in Brazil, where a percentage of biodiesel must necessarily be supplied by small producers. These experiences, as well as other success stories, should be disseminated widely by south – south exchanges.

As regards **macroeconomic policies**, supported by development partners i.a. by means of budget support, they should take into account the impacts of the evolution of the country's energy and food situation on the macroeconomic situation.

Finally with regards to **policy coherence for development** in the field of biofuels, support could be provided to countries and regional groupings in order for PCD to be considered when policies are designed. Support, in the form of capacity building measures, dissemination of information and good practices could be tailored to fit the needs of the developing countries interested in biofuels development. PCD should be included in the political dialogue between the EU and all countries.

The various policy options and accompanying measures proposed in this paper, both for the short term and the long term, are summarised in the table below and presented in relation to their intended impact on four key issues relevant to developing countries: the food-fuel

debate, the climate change/environment issue, the economic development issues and the social issues:

	Food -Fuel issue	Climate Change/Environment issues	Economic Development issues	Social issues
Energy Policy options.	• Reporting with significant development component.	• Promoting technological transfers	• Promoting Technological transfer	• Reporting with significant development component.
Environment Policy options	• Sustainability standards	• Sustainability standards • Promoting implementation of MEA and internationally agreed labour conventions and social standards.		• Promoting implementation of MEA and internationally agreed labour conventions and social standards.
Trade Policy Options		• Balanced supply of EU Biofuels Market	• Balanced supply of EU biofuels Market • Preferential access for LDCs • Intellectual Property Rights • Review non tariff barriers • Minimizing Trade Distortion by Domestic Subsidies	
• Research Policy Options.	• Broadening the range of biomass sources of energy use. • Supporting research on biofuels production, processing options and second generation biofuels. • Promoting the use of research results in policy making.	• Broadening the range of biomass sources of energy use. • Supporting research on biofuels production, processing options and second generation biofuels. • Promoting the use of research results in policy making	• Broadening the range of biomass sources of energy use. • Supporting research on biofuels production, processing options and second generation biofuels. • Promoting DC expert participation in scientific/technical networks on bioenergy. • Promoting the use of research results in policy making.	• Promoting the use of research results in policy making.
Development Cooperation Measures.	• Supporting dialogue with DCs. • Providing state of the art information/analyses on biofuels issues (all dimensions) • Supporting a dedicated forum on food-fuel issues, in link with existing fora. • Supporting design and enforcement of national agricultural, energy, sustainable land use policies. • Supporting measures for DC to avoid land conversion. • Supporting DCs participation in standards	• Providing state of the art information/analyses on biofuels issues (all dimensions) • Supporting design and enforcement of national agricultural, energy, sustainable land use policies • Support to implementation of MEA. • Supporting technological transfer (public private partnerships) through Energy programmes. • Supporting measures for DC to avoid land conversion. • Supporting DCs	• Providing state of the art information/analyses on biofuels issues (all dimensions) • Supporting technological transfer (public private partnerships) through Energy programmes. • Supporting DCs participation in standards setting at international level. • Promoting the use of Aid for Trade to cover DC needs. • Supporting the design and enforcement of labour policies and implementation of	• Providing state of the art information/analyses on biofuels issues (all dimensions) • Supporting measures for DC to avoid land conversion. • Supporting DCs participation in standards setting at international level. • Supporting the design and enforcement of labour policies and implementation of international conventions. • Supporting DCs and regional groupings in PCD.

	setting at international level. • Supporting south-south exchange in policy making. • Supporting DCs and regional groupings in PCD. •	participation in standards setting at international level. • Supporting DCs and regional groupings in PCD.	international conventions. • Supporting south-south exchange in policy making. • Supporting DCs and regional groupings in PCD.	•

3. POLICY COHERENCE FOR DEVELOPMENT: MIGRATION

3.1. Background

Any European policy to structure and manage migration intertwines *by definition* with development policy: migration has an impact on development and development has an impact on migration. With the Global Approach to Migration in 2005[15], the EU brought together migration and development strategies – as well as other migration-related policies – within a single policy framework, which was further developed by the European Council in December 2006, defining the comprehensive EU Migration Policy. The Council conclusions of 2005 and 2007[16] on PCD spelled out some of the measures for exploiting the benefits of migration for development while addressing its downsides. There are several issues that would merit further consideration in the context of promoting coherence between migration and development policies. However, this chapter concentrates on what are often considered the most pressing and visible PCD challenges in the area of migration: brain drain and 'brain waste'.

3.2. Challenges and opportunities

Migration has become a predominant factor in sustaining and expanding the EU labour force. Migration contributed to strong employment growth in most EU Member States over the period 1995 to 2005[17], due to both the arrival of new migrants and to the increase in the employment rate of already present migrants. In the future, it is likely that the EU will continue to rely (to varying extents in different Member States) on inward migration as one of the responses to labour market shortages and changes in fertility and mortality, both for highly skilled and low-skilled workers. The proposed draft Directive on the admission of third country nationals for highly qualified employment[18] and the upcoming draft Directive on Seasonal Workers are to be seen in this context, while respecting the division of competences between the EU and Member States as provided by the Treaty.

Outward labour migration can also contribute to reducing poverty in the developing countries of origin. These countries benefit from reduced domestic labour market pressures, from remittances sent home by migrants abroad, and possibly – in the case of temporary or permanent return of migrants – from 'brain gain' of migrants taking home their skills and

15 Brussels European Council of 15/16 December 2005.

16 Doc. 15116/07.

17 Staff Working Paper Migration into the EU: main determinants and economic impact, Brussels, 06/11/2007 ECFIN/E3(2007)REP/54748-Rev1.

18 Proposal for a Council Directive on conditions of entry and residence of third-country nationals for the purposes of highly qualified employment - COM(2007) 637.

knowledge obtained elsewhere Moreover, the prospect of emigration and prosperity abroad often constitutes an inducement for potential migrants to invest in a good education[19].

However, in order for this ´brain gain´ to be realised, there must be a favourable environment for migrants' skills to be used and developed. 'Brain waste' – or the phenomenon that people work well below their level of skills or education – is a reality both in developing and developed countries. Studies show that if there is no responsible and established recruitment policy in place, migrants run a major risk of being ´de-skilled´, with irreversible damage to the human capital of the source countries. If legal migration routes are limited or non-existent, skilled migrants may take the risk of illegal migration, and may take up illegal employment below their level of competence. Such migrant community is quite unlikely to contribute to brain circulation.

Facilitating well managed labour mobility can therefore be an opportunity for both the EU and for the developing world. This rationale is reflected in the EU-Africa Partnership on Migration, Mobility and Employment, adopted at the Summit in Lisbon in December 2007. With this Partnership the EU and Africa decided for the first time to address migration and mobility issues in the framework of labour market disparities both within and between the two continents.

However, labour migration can also have downsides for those developing countries that do not benefit from sufficient financial reinvestment or short-term or permanent return of skills and experience. In many African and Caribbean countries the brain drain phenomenon has a devastating impact on economic and social development. The health sector in Africa perhaps is the clearest case in point. "It has been argued that resource-poor countries are providing a perverse subsidy to health services in resource-rich countries. Calculations based on migration of health workers from Ghana to the UK estimate the saving in training to the UK from recruitment of the 293 Ghanaian doctors and 1021 Ghanaian nurses registered as practising in the UK in 2003/2004 at £65 million for doctor training and £35 million for nurse training. Ghana's loss includes both the training cost and the opportunity cost of understaffed health facilities."[20]

3.3. The PCD Dimension: Multifaceted Policy-Making Process

Brain drain is a consequence of an individual choice made by a skilled person in a globalised economy, with countries competing to attract the most skilled regardless of their origin. Brain drain is a growing phenomenon[21], which affects EU and Member States but hits the poorest and smallest countries hardest. In some African countries, such as Guinea-Bissau, Mozambique, Mauritius, the Gambia, Sierra Leone, Ghana, Kenya, Congo Republic and Uganda, more than 25% of the highly skilled workers live in developed countries[22]. Figures in

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19 "Gender matters in migration decision making, but it overlaps with other factors. Poorer households are more likely to send young women to the city as seasonal migrants. Daughters are more likely to remit. Women may be less eager to return home than men because they fear that upon return they will loose freedoms acquired in the destination country." Policy Coherence for Development 2007– Migration and Developing Countries, Development Centre of the Organisation for Economic Co-operation and Development, OECD 2007 p. 76.

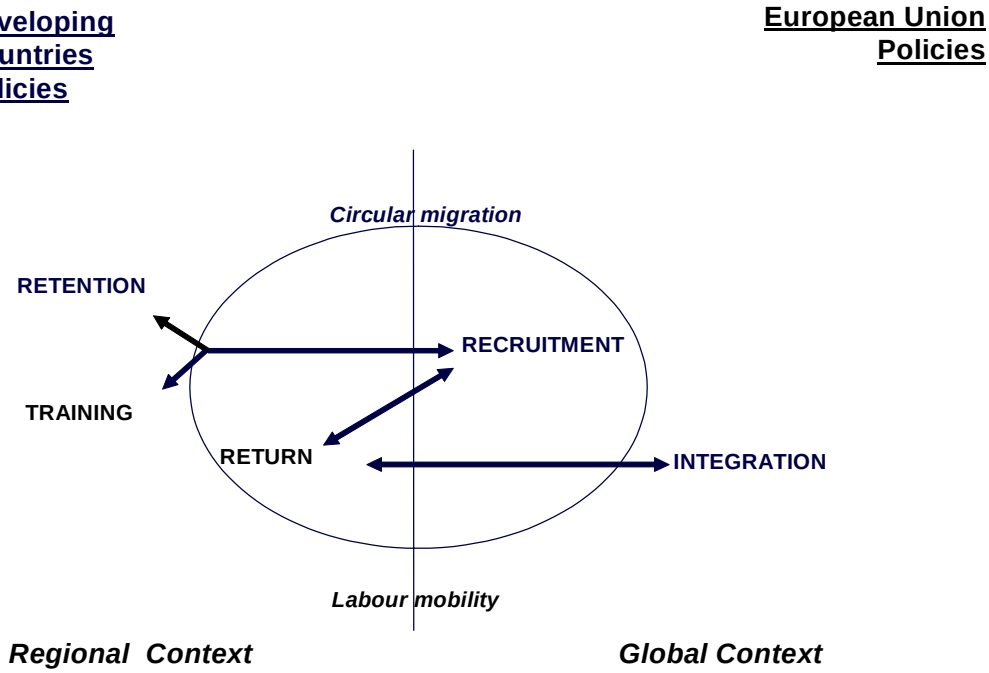
20 EU Strategy for Action on the Crisis in Human Resources for Health in Developing Countries - COM(2005) 642, p. 7.

21 Continued improvement of data gathering remains important. OECD 2007 (see previous footnote), mentions that consistent data on skilled emigration have been scarce. New databases that fill the gap but have their limitations: the OECD Database on Immigrants and Expatriates in OECD countries and the database compiled by Docquier and Rapoport (2004.

22 OECD 2007.

some Caribbean Island States mount up 70%. Brain drain particularly affects the capacity of developing countries to achieve the MDGs, notably in areas such as health and education.

In conceptual and policy terms, brain drain exemplifies some of the major challenges and contradictions of the global migration policy discourse, as summarised in the following chart:



The circle represents the movement of people – the labour mobility between developing and developed countries, triggered by recruitment, and return. The logical contradiction between these two concepts produces the first PCD challenge.

Outside the mobility circle, in the left part of this figure, we are in developing countries. Here the relevant factors are training and retention (or rather the lack of it). These efforts by developing countries are challenged by recruitment policies of developed countries in the mobility circle, hence the arrow, representing the second PCD challenge.

Finally, on the right-hand side, we are in the EU. Here the mobility aspect is influenced by an important process called 'integration'. Integration of migrants is in contradiction with their return. The entire notion of circular migration is not entirely compatible with the idea of integration. And here we have the third arrow, the third potential PCD challenge.

3.4. The Way Forward

Many policies and programmes are in place to strengthen and promote retention, training, recruitment, integration, and return, both in the EU and in developing countries. The problem is that many of these policies are conducted in relative isolation, and are not designed to address the brain drain challenges.

There are, however, exceptions: in the area of health much in particular, much progress has been made with the development of the European Programme for Action to tackle the critical shortage of health workers in developing countries (2007-2013). Experience in this sector could inspire other and possibly more holistic efforts to address brain drain challenges. Rather than providing a comprehensive view of all possible policy-measures, the recommendations

hereunder will therefore focus on some measures that have proven successful or are worth exploring further.

3.4.1. Training

Many developing countries experience difficulties in producing sufficient numbers of highly skilled workers and their ability to do so is further undermined by emigration. A logical first priority is, therefore, to increase targeted investments in skills training. Destination countries should help developing countries scale up education and vocational training in critical sectors, including through the creation of schools/workshops to provide adequate training foryoung professionals, in direct response to local, national and external labour market needs.

Several measures have been undertaken to try to ensure that people trained in a developing country do not immediately leave after graduation. Some sending countries, such as South Africa and Ghana, established for example *bond schemes* to recover the cost of socially funded education. These governments cover training and education costs, and in exchange, the graduates work for public health services for a few years. Other countries argue that, instead of asking migrants to pay back their own education, (the employer in) the destination country should pay for the training costs of its newly recruited employee from abroad. Such "*compensation schemes*" have however generated a number of conceptual and practical problems.

An alternative and potentially promising avenue could be to invest in so-called '*training for export'*. The EU and the sending countries could build on experiences of countries such as India, the Philippines and a number of Caribbean states to define surplus training strategies of health professionals. Certain categories of professionals are trained in numbers that go beyond the countries' domestic need, with the explicit aim of having these professionals employed abroad. Partly because of this training, these countries manage to maintain a relatively high density of health professionals at home despite high expatriation rates. Of course, this 'training for export' should be part of a comprehensive strategy, including to avoid potential 'brain waste', and needs to be linked to forecasts of domestic labour market patterns. When considering the options for such a policy, the long-term consequences of such '*training for export'* for economic and human resources should be taken into account. According to the current state of knowledge, such training can bring least harm when financed privately and performed in close cooperation between source and destination countries. It should also be well integrated in the broader socio-economic strategy of the country in question.

3.4.2. Retention

People migrate for many reasons. Some of the most frequently mentioned reasons are safety, stability, better living conditions, better facilities, career opportunities and remuneration. Hence, push factors for migration usually represent a mix of general (political, economic, social), and personal (career-related) considerations. To be successful, retention strategies need to address both levels and should look across generations, with special focus on youth as stakeholders for the future of the country.

The prime responsibility for the retention of skilled workers therefore lies with the country of origin. Governments of developing countries have the responsibility to provide safety and stability for their citizens and create optimal political, social and economic working and living conditions. The EU can support this in many ways, for example by providing *effective development aid*, by supporting *governance reforms*, by *aligning* the aid with the nationally defined retention strategies and priorities, and by providing *long-term budget support* to underpin domestic financing of sensitive sectors.

Recognising the prime responsibility of the developing countries, it is imperative to *strengthen the political and policy dialogue* between the EU and the countries of origin on the ways and means to retain (highly) skilled labour. This should include dialogue on financing and reform of specific brain-drain-vulnerable sectors as well as ways to address other push factors such as governance, economic reform and labour policies.

3.4.3. Recruitment

The active recruitment in Europe of workers from developing countries working in areas and sectors under severe "human resources stress" can cause substantial damage to the development of countries of origin. To seriously address this PCD challenge, the EU and its Member States should first and foremost take the necessary steps to ensure that enough doctors, nurses, engineers and researchers etc. are trained in European countries and that they have working conditions that are sufficiently attractive to discourage them from looking for greener pastures in other developed countries outside the EU.

To make sure this recruitment is done in an "ethical" way, *codes of ethical conduct* have been designed, especially in the health sector. Such codes seek to identify countries from which recruitment may be less harmful and to suggest acceptable forms of recruitment from poor countries. Such voluntary, non-legally-binding instruments have been developed since 1999.

On the basis of the Programme for Action to tackle the critical shortage of health workers in developing countries, the EU is now working on an EU Code of Conduct of ethical recruitment of health workers. Obviously, these codes are most effective when all employers across a sector have signed up, including the private sector. Similarly, success will depend on the extension of ethical recruitment practices to all industrialised countries, not just those in the EU.

As a general consideration it should be added that codes of conduct raise issues of individual freedom of movement, as de facto discriminatory clauses.

These voluntary measures should however be combined with more structural and compulsory policies. The EU (Member States) could notably pursue the conclusion of *comprehensive employment agreements* with developing countries to improve the management of international mobility of workers, including in sectors under severe 'human resources stress'. Such agreements could limit the active recruitment of workers in these sectors, but could also include clauses whereby the destination country agrees to underwrite the costs of training additional staff. They could provide for the possibility of recruited staff to go back to the countries of origin to work, temporarily but regularly, without losing residence rights in the EU (circular migration schemes allowing for example, doctors to work several months in the country of origin). They could also recruit staff for a fixed period only, prior to the staff returning to the source country; and/or limit recruitment to surplus staff in source countries, taking into account absorption capacities and regional aspects.

3.4.4. Return

The return of migrants having acquired new professional expertise and skills, and financial resources in the destination country, can be of obvious benefit to the countries of origin. However, permanent voluntary return is often very difficult to achieve in the poorest developing countries for the very same reasons that hinder the retention of people. The EU is therefore considering the development of temporary–or circular-migration, comprising a potential triple-win situation, for the developing and developed countries as well as for the migrants themselves.

To stimulate temporary or permanent return of students and scholars, some countries of origin have imposed *return clauses* in scholarships and grants. This has however proven difficult to implement. The Commission is currently preparing a draft Directive on a Harmonised Admission Procedure for Remunerated Trainees. This proposal could make a significant contribution to receiving countries' endeavours to facilitate temporary migration and skills upgrading for highly skilled migrants, provided that clear time limits and very strong incentives for return are incorporated (for example, preventing the trainee, at the end of his/her traineeship, from applying for another type of residence permit). Partnerships between health, education or research institutions in developing countries and in EU Member States, focused on capacity building, improvement of the professional environment and exchanges of staff, should provide the conducive framework for such circular migration.

In more general terms many destination countries have programmes in place that provide *incentives to return*. While financial incentives have in general proven relatively ineffective, 'technical' incentives have in some cases generated positive results. Services such as the provision of information on small scale investment opportunities, support in drawing up a business plan and access to appropriate credit mechanisms can effectively help members of migrant communities to invest and return to their country of origin. Also, the explicit recognition of skills and experience acquired abroad, could work as an incentive to be involved and build on the future of one's country of origin. These incentives should ideally take on board wider development strategies aimed at reaching out to diasporas, especially in priority sectors such as health or education; in agriculture, manufacturing or services; in sectors that can be linked to the promotion of 'ethnic' trade or 'ethnic tourism' among migrant communities in the countries of destination, etc.

One of the more structural and promising approaches –which needs to be furthered- is to provide migrants with *legal guarantees for (temporary) return* to former destination countries. The EU (Member States) should allow migrants to travel back and forth to their home country for a reasonable period of time without losing their acquired residence rights. In this context the 'portability of acquired social rights, notably equal rights as regards the export of old-age pensions is fundamental, as it limits the risks involved in seeking suitable business or employment opportunities in the country of origin. In the event of definitive return, the facilitation of mobility with the former country of residence (simplified procedures for issuing short-stay visa) could constitute an additional incentive.

3.4.5. Integration

While (circular) migration comprises several potential benefits, it also poses additional challenges for the integration of migrants. The emergence of trans-national communities, continuously moving between two or more countries might slow down the mutual accommodation process by residents of Member States and migrants, including the migrant's adoption of the host country's language, values, cultural, history and institutional characteristics. At the same time, integration was and remains a fundamental pillar of any EU migration policy. Successful integration can also contribute to improving migrants' capacity as actors for development since it strengthens their human, social and financial capital.

The key challenge is thus, strengthening the ability of the migrant to secure ties with the country of origin while at the same time establish new ties with the destination country. This challenge may involve considering the need for differentiated approaches to integration in the case of temporary migrants., In this context, supporting *diaspora organisations* or programmes for diasporas may help prepare for social and economic (re)integration and bridgethe gap between integration in the country of residence and continued involvement in the country of origin. Also, support to youth networks would be important in this respect.

To effectively match integration and circular migration it should be considered whether to open up the possibility for longer-term migrants to obtain the citizenship of their host country without losing their citizenship of origin (in EU countries where this does not yet exist). Citizenship schemes such as *dual nationality* or *dual residence* could simultaneously enhance the ties and sense of belonging of migrants towards their host country and towards their country of origin. It could facilitate investment back home, the remittances of funds and even serve as an incentive for permanent return. On the other hand, the active contribution of migrants to their countries of origin might also contribute to their integration in the host country, by giving them self-confidence and a sense of achievement.

3.5. Conclusion

The overarching challenge is to try and make *migration work for development*, not only in developing countries, but also in the EU. To try and reconcile Europe's requirements for migration with development needs. The challenge –the PCD challenge- for Europe and its development partners is to exploit this double potential, while addressing the downsides of migration.

In section 3.4 some concrete suggestions were presented to tackle one of the major downsides of migration: brain drain. As said before, these recommendations do not aim to provide a complete strategy, and may not be appropriate for all situations. But they are based on existing practices and experiences, and are worth exploring/testing in dialogue and partnership with, of course, the relevant countries of origin:

Area	***Policy proposal***
Training	Promote 'training for export'
Retention	Make retention part of political dialogue
Recruitment	Negotiate employment agreements
Return	Ensure equal rights as regards the export of old-age pensions
Integration	Consider dual citizenship

4. POLICY COHERENCE FOR DEVELOPMENT : RESEARCH

4.1. Background - The Importance of Research for Development

Research policy can make an important contribution to development. This has been recognised by the EU, when in 2005 it committed itself to policy coherence for development

in 12 policy areas, including research and innovation[23] and on several earlier occasions also with the ACP states[24], as well as at the international level with the 2005 Millennium Declaration.

Despite this recognition of the development potential of research, there is no comprehensive policy framework outlining how research policy can contribute to development and how this commitment should be implemented is lacking. This paper aims to launch a process to fill this gap by addressing PCD issues. It will be followed by further proposals in the context of the forthcoming Communication 'A Policy Framework for International S&T cooperation' and by initiatives aiming at coordinating European research for development.

The Council in its conclusion on the PCD report[25] considers that EU research policies, both at EC and national level, should contribute to overall development policy objectives by supporting research activities in areas of interest for developing countries, and continue supporting specific international cooperation projects involving research centres, universities and other stakeholders from developing countries. The Council notes that the development potential of research should be further exploited.

Research policy can contribute to development in two ways: directly, in that progress towards the MDGs in particular those on health, food security, and the environment depends, in part, on advances in research in areas such health and health systems research including reproductive health, agriculture, renewable energies and environmentally friendly technology**.** Indirectly, in that a strong research base in a country can help create the enabling environment that will allow developing countries to achieve the MDGs, by strengthening their international competitiveness and promoting sustained growth and social development.

The UNCTAD Least Developed Countries Report 2007 'Knowledge, Technological Learning and Innovation for Development' makes the case for Least Developed Countries. It argues that 'unless LDCs adopt policies to stimulate technological catch-up with the rest of the world, they will continue to fall behind other countries technologically and face deepening marginalization in the global economy.'[26] Furthermore, the weak diffusion of technologies within a society is identified as an important factor explaining the persistence of poverty despite of economic growth.[27]

Through development cooperation the EU and its Member States can contribute to increasing the research capacity of developing countries. The Joint Africa-EU Strategic Partnership states that Africa and the EU will strengthen their cooperation in building knowledge based societies. This can be done in part through the targeted use of development instrument such as the EDF, DCI (e.g. the Food Security Thematic Programme) and the ENPi to build up research capacity.

But strengthening research capacities through development cooperation, although crucial, is not all that can be done. In addition the EU, taking a PCD approach, is committed to looking at research policy and its contribution to development. This is the focus of this Paper.

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23 See also the resolution of the European Parliament on the importance of supporting measures to improve international scientific cooperation with Africa, 21 February 2008.

24 Cape Town Declaration on Research for Sustainable Development, ACP-EU Ministerial Forum on Research for Sustainable Development, held in Cape Town in July 2002.

25 Conclusions of the Council and the Representatives of the Governments of the Member States Meeting within the Council on 'Policy Coherence for Development', 20 November 2007.

26 UNCTAD, The Least Developed Countries Report 2007, Knowledge, Technological Learning and Innovation for Development, p. 1.

27 World Bank, Global economic prospects report, 2008.

The European Community's research policy – is totally based on the principle of research excellence. It has two objectives, first to strengthen the scientific and technological bases of Community industry and encourage it to become more competitive, and second to promote all the research activities deemed necessary for other Community policies, including development policy. This second objective mirrors and roots the general obligation of coherence of EU policies with development objectives in the specific area of research policy[28]. The totality of the 7th Framework Programme is open to ICPC (International Cooperation Partner Countries) with specific targets (e.g. Health, Food, Environment) to Developing Countries.

4.2. Challenges and Opportunities – Research on MDG Related Issues, Capacities for Research and the Brain Drain

For research to contribute to the MDGs three challenges can be identified.

1) Promoting research on MDG related issues and its effective communication so as to make results accessible well beyond the research community itself.

2) Strengthening developing countries' research capacities, including a research policy framework, infrastructure and researchers and their institutions and appropriate financial mechanisms to promote uptake and expand social and technological innovation.

3) Attracting researchers to and retaining them in developing countries

More research on MDG related issues

Notwithstanding the important existing efforts of European research policies, and in particular the EC Research Framework Programme, development policies and their implementation would benefit from increased research efforts in areas directly linked to the MDG, including health and in particular poverty-related diseases, neglected infectious diseases, health systems, reproductive health, education, agriculture and food security, biodiversity, energy (including solar and biofuels), water, desertification, climate change and demography. When conducting this research, particular attention should be paid to the needs and interests of children and women and of communicating results well beyond the research communities themselves.

Strengthening developing countries research capacities

A major challenge is the often limited research capacity. Many developing countries do not have national S&T strategies or long-lasting research programmes and sometimes their research infrastructure is declining. While African countries have, through the NEPAD/AU Science & Technology Consolidated Plan of Action, committed themselves to spend 1% of their GDP on research[29], this figure is currently much lower. In 2003 African and Asian LDCs spent respectively 0.3% and 0.5% of their GDP on R&D and Other Developing Countries 0.8% compared to 2.4% by High Income OECD Countries[30].

Developing countries therefore need more own programmes and centres to do the research they need or apply research done abroad to local environments and strengthen their national and regional innovation systems. Doing research is not a luxury for developing countries: it is necessary for their economies' international competitiveness. Moreover, research in areas such as employment or social issues is important to provide an evidence base for policy decisions and the design for related strategies. Strengthening research capacities should go hand in hand

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28 See articles 163 and 178 of the Treaty Establishing the European Community.

29 Africa's Science &Technology Consolidated Plan of Action, NEPAD, South Africa 2006.

30 UNCTAD, The Least Developed Countries Report 2007, p. 5.

with a stronger involvement of women in research programmes, so as to promote gender equality.

In areas such as climate change, communicable diseases- or GMOs, which entail a global dimension, the consequences for developing countries can be very different from those for developed countries. Doing their own research will allow developing countries to actively contribute to the international debate and defend their own interests.[31]

Stronger research capacities in developing countries will make it easier for them to take advantage of the opportunities available for international cooperation, including the EU Research Framework Programmes, something that in turn- contributes to strengthening their capacities through mutual learning at world wide level and gives researchers the opportunity to participate in collaborative global projects whilst remaining in their own country.

Finally own research capacities also constitute an incentive for researchers and professors to pursue their activities in developing countries.

Researcher brain drain

Developing countries lose human capital through the emigration of researchers, and their capacity to do research is weakened. The impact of this brain drain varies from one country to another. The positive effects include eventual brain gain through the return of emigrants, brain circulation by means of temporary expatriation and return, creation of business and knowledge linkages between diasporas and home countries leading to increased technology flows and investment, higher enrolment in tertiary education and an increase in remittances. In theory, these positive consequences might off-set the costs of emigration.

In reality, the situation is much more nuanced and suggests that in many countries the negative effects of the emigration of researchers prevail. Higher enrolment rates in universities are good for a country only if a significant proportion of graduate students stay in the country or return to their country after a period abroad and contribute to the provision of higher value of goods and services to the domestic economy. Otherwise there is a risk that a country looses its investment in the training of researchers when they leave the country. Researchers might come back but even where there is brain circulation its positive impact is usually limited by the differences in the quality of out-migrants and return migrants. Emigrated researchers can contribute to the development of their country through remittances, but remittances from qualified migrants are often smaller than from low-skilled workers. While qualified workers have higher earnings they are more likely to become permanent immigrants with weaker links to their countries of origin.[32]

It is neither feasible nor politically desirable to stop researchers from developing countries from coming to the EU. It is important that these researchers have the possibility to gain international experience. From a coherence point of view though it is important to mitigate possible negative consequences and make those flows contribute positively to developing countries' national knowledge system.

The best way to address brain drain is of course the socio-economic development of a country. However, in the short and medium term targeted measures could be taken with a view to increasing incentives for emigrants to return home. This can include return schemes

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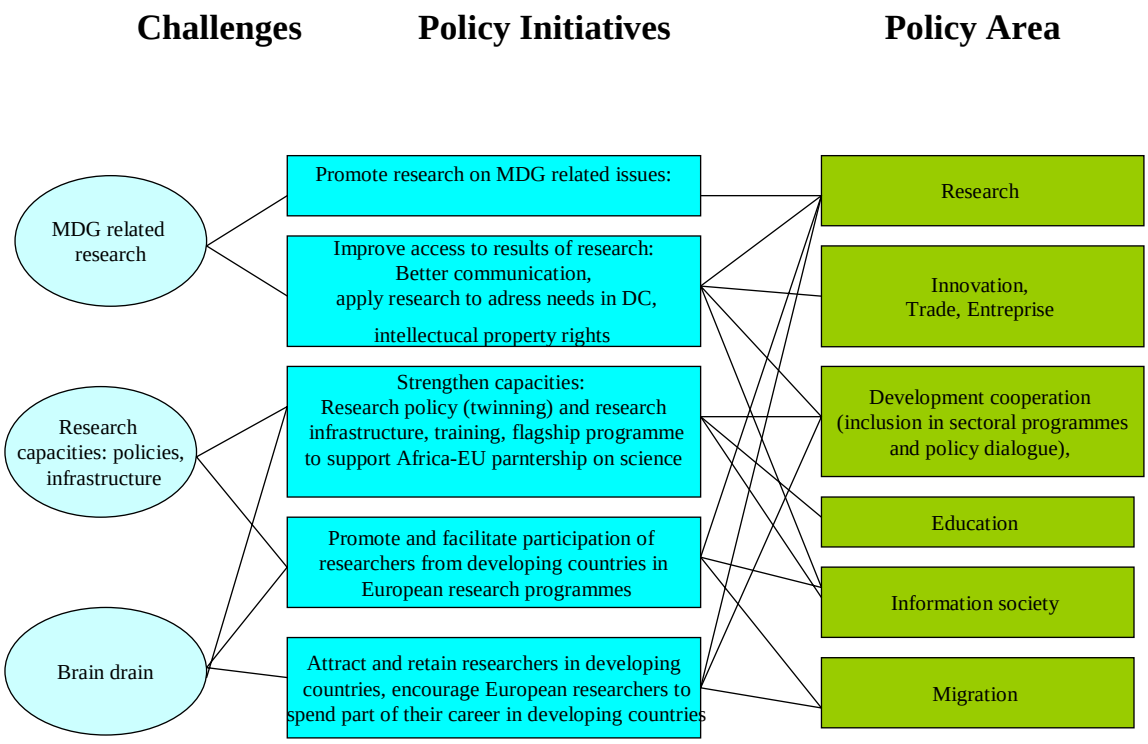
31 UN Conference for Science and Technology for Development, 1979.

32 For an analysis of the impact of international emigration of skilled persons, see UNCTAD, The Least Developed Countries Report 2007 p. 139 ff.

and other measures that improve researchers' working conditions and career paths and contribute to increased salaries.[33].

4.3. The PCD Dimension: Multifaceted Policy Making Process

Making research work for development requires a coordinated policy-making process cutting across several areas and competences. To address the three challenges faced by developing countries the EU needs to launch five clusters of policy initiatives in different policy areas, both at Community and Member State level. The coordination and harmonisation of the policy making process and the different clusters will require a continuous dialogue with all stakeholders. The joint policy initiatives will have to incorporate both aspects of research and development at all levels as well as progress indicators.



[33] The migration part of this paper deals with the subject of brain drain in a more comprehensive way.

4.4. The Way Forward: Policy Recommendations

This section puts forward recommendations for enhancing the role that research and other policies can play within the overall policy mix. EC research policy already promotes research on MDG related issues, and encourages the participation of researchers from developing countries in international research programmes, thereby also attracting and retaining researchers in developing countries. This policy needs to be strengthened and its scope increased. Member States can contribute to all five policy initiatives. Policies such as information society, innovation and migration have important enabling roles to play. Development has a crucial function with regard to the strengthening of research capacities.

4.4.1. Enhancing the contribution of EC research policy to development

More research on MDG related issues

The main instrument for implementing Community research policy is the Framework Programme. The current Research Framework Programme (FP7) runs from 2007-2013. The Specific Programme within FP7 with the highest endowment is the Cooperation Programme (€32.413 billion for 2007-2013). The themes with the highest direct relevance for development cooperation and contributing to developing the required knowledge base are: health, food, agriculture and fisheries, and biotechnology, energy, environment (including climate change), and socio-economic sciences and the humanities. Research on information society, which can make an important contribution to development, too, accounts for about one third of the Cooperation Programme.

It is one of the objectives of the integrating approach to international cooperation in FP7 to address specific problems that third countries face or that have a global character. Within the thematic areas Specific International Cooperation Actions (SICAs) can address the particular needs of developing countries by means of dedicated cooperative activities. Specific actions are built into the thematic programmes each year e.g. in the 2007/2008 Work Programmes on the environment theme: health impacts of drought and desertification in the Mediterranean partner countries; in the food, agriculture and fisheries, and biotechnologies theme: conservation, management and exploitation of living aquatic resources outside EU waters; on health: child and maternal health, health systems research, neglected infectious diseases and HIV/AIDS, malaria and tuberculosis research with India. SICAs not only address the problems of developing countries, they require equitable participation of researchers from these countries (funded by the FP).

The Capacities Programme of FP7 plays a crucial role in promoting and implementing international S&T cooperation. Its activities enable the EU, third countries and regions to discuss current and future research priorities, to facilitate debate between the different stakeholders. The outcome of these dialogues provides intelligence for developing research policy, gives input to the respective FP7 specific programmes and inspires research topics for international cooperation, in particular the Cooperation Programme.

By means of INCO-NETS, which are platforms bringing together policy makers and stakeholders at bi-regional level, dialogues will be supported to promote better mutual understanding, identify S&T priorities of shared interest e.g. through workshops and development of FP7 'Information Points' in third countries. Six INCO-NETS have been established so far: CAST Net for Sub-Saharan Africa and five others for the Western Balkans, Eastern Europe and Central Asia, ASEAN, Latin America and the Mediterranean.

Three recommendations are put forward to do more research on MDG related issues:

- Ensure that the thematic programmes include 'sufficient' research topics relevant for developing countries, funding should be available for SICAs in specific sectors relevant for developing countries.
- Other research initiatives such as the EDCTP (European and Developing Countries Clinical Trials Partnership) have started to show results on specific targets of the MDGs. Continued strong commitment and support from the participating developing countries at the government level is needed.
- Dialogue between the EU and developing countries should be improved to develop better mutual understanding of S&T policies and implementation, promote their coordination in relevant areas and identify research topics relevant for developing countries and also of interest to the EU. INCO-NETS should function as one of the multi-stakeholder interfaces between developing countries and the EU.

Improving Access to Research Results

Doing research on topics of interest to developing countries is important but not in itself sufficient. It is equally important that developing countries can actually benefit from the results of research. Better communication between the research community and the development community as well as the application of research produced under the FP7 and previous FPs to address local problems and to support poverty-reduction strategies, are crucial to that end.

- Funded FP projects of relevance to MDGs should assume a more important role in communicating opportunities and results of research to developing countries. This implies improved provision of information and the involvement of EC delegations and Member States' embassies in research policy, plusenhanced and intensified communication between the research and development 'communities', including NGOs and private companies. INCO-NETS, EC Delegations in developing countries and Embassies of Member States may also play a role in this dissemination.

Another issue in this context is the patentability of inventions, resulting from research financed under the FP7, which stipulates that any research results belong to the research partners involved, but many types of research relevant to the MDGs are in the public domain with open access to results.

- The Seventh Research Framework Programme should facilitate developing countries access to the results of research funded with public money which can contribute to development goals (e.g. in the area of health), while ensuring that industry and research institutes still profit from their research. This could be achieved through licensing, where relevant, at reduced rates for Least Developed Countries or other appropriate mechanisms within the context of the TRIPS agreement.

Strengthening developing countries research capacities by promoting their participation in international research cooperation

One way to sustain and extend research capacities in developing countries that are interested and have acquired the necessary capacity and expertise, is to involve them in international research cooperation.

Researchers from developing countries can be included as partners in consortia applying for any part of the FP. However, such participation has tended to be low due to the natural European focus of many of the FP topics, and the lack of R&D capacity in many developing

countries, but possibly also due to a lack of knowledge in Europe about potential partners in developing countries.

INCO-NETS and FP7 Contact Points at national level can play an important role in promoting the participation of researchers from developing countries by informing them about the possibilities of participating in FP7 and assisting them during the application process. In addition, INCO-NETS and FP7 Contact Points should promote potential partners from developing countries in the Member States and Research Framework Programme Associate States. European researchers, who put together the consortia for participation in the Research Framework Programme are often unaware of the research capacities and opportunities in developing countries.

Another instrument to develop S&T partnerships will be based on bi-lateral dialogues and co-ordination of policy initiatives in jointly defined priority areas (BILATs). These strategic partnerships will focus on the 18 countries with an S&T Agreement with the EC, 11 of these countries are categorized as developing countries.

The following steps could be taken to strengthen developing countries research capacity through research cooperation:

- Launch calls for proposals which include some regional targeting of developing countries by including specific priorities (SICAs) where the expertise and excellence that is available in developing countries is harnessed and their potential for future participation is increased.
- Strengthen the role of INCO-NETS in promoting the participation of developing countries in FP7, in SICAs and in other types of project.
- Encourage the nomination of FP7 Contact Points in all Developing Countries
- Develop a flagship programme (co-funded, amongst others, by development and research funds) to support the Africa-EU partnership on science, information society and space, which aims to increase Africa's research capacities and upgrade its technical capacity.

Mitigating researcher brain drain

Involving excellent researchers from developing countries in global research programmes such as FP7, is not only important for strengthening their research capacities, but also constitutes one of the most effective methods of mitigating brain drain. It enables such researchers to participate in projects, whose excellence is internationally attested, whilst remaining in their countries of origin. All partners benefit from the pooling of knowledge-generation capacities, experience and expertise to address common challenges. Promoting such mutually beneficial cooperation can achieve true brain circulation.

Encouraging balanced mobility between developing countries and Europe is another way of mitigating brain drain. The instruments of FP7, and in particular the Marie Curie actions, provide a useful framework for the participation of and support for researchers from developing countries. In particular, the International Incoming and Outgoing Fellowship Schemes provide possibilities for exchange, although they are not sufficiently used at the current stage. The Outgoing action allows European researchers to have a mobility experience in a country outside the EU or the countries associated with the FP; however since most researchers apply to go to industrialised countries the scheme is hardly used for stays in developing countries. Incoming fellowships not only provide the possibility for researchers to come to Europe, but include a dedicated return mechanism for researchers from developing countries. The number of participants from these countries is, however, also low. For both actions, awareness measures are certainly necessary to increase the impact of collaboration and exchange with developing countries.

Apart from these two actions, it is also possible for early-stage researchers to do doctoral studies in Marie Curie Initial Training Networks. Again, these possibilities for training several thousands of researchers every year are fully open to researchers from developing countries, and these possibilities should be promoted more.

Finally, the Marie Curie International Research Staff Exchange Scheme (IRSES)[34], a new instrument launched only in 2008, is a very promising initiative for developing countries, as it could start and strengthen numerous research collaborations and exchanges, while not entrenching a major risk of brain drain. This action allows the exchange of researchers between EU/associated-country organisations and organisations in ICPC countries and countries covered by the European Neighbourhood Policy. It covers 29 countries of which 22 are categorised as 'developing'. It also addresses countries with an S&T agreement, several of which are Developing Countries. It could moreover be considered to open this action in the future to all Developing countries

Four recommendations regarding mobility and the development of human resources can be put forward:

- Analyse the participation of developing countries in the existing Marie Curie Actions and examine how the participation of developing countries can be stimulated.
- Based on the experience to be gained from the newly launched IRSES scheme, examine the possible expansion of the scheme to other developing countries and regions.
- Utilise the potential of the diaspora of developing country researchers in Europe, which can function as an important bridge between Europe and the developing world, through the new action 'Non-European Researchers in Europe-Link' (NERE-Link) of the People Programme, which aims to promote interaction between non-European researchers from the same region active in Europe as well as with their countries/regions of origin.
- Examine, together with Member States, the possibility of establishing bridging mechanisms such as voluntary mentoring schemes under which end-of-career-researchers/professors are enabled to teach and supervise research in developing countries, possibly through twinning mechanisms.

4.4.2. Member States and research policies at European level – how to make the European Research Area more "development-friendly"

Research is a shared competence between the EC and the Member States. EU Member States have different policies and programmes for research. The main instrument for the implementation of Community research policy, the Research Framework Programme, accounts for about 6% of total public research funding in the European Union.

For this reason, PCD should be considered in the context of the European Research Area as a whole, which also includes national resources, as well as individually by Member States.

To create synergies and promote mutual learning Member States should provide information on and better coordinate amongst each other and with the Commission their research cooperation with developing countries. One means of doing this may be through ERA-NETS. The objective of the ERA-NETS scheme is to develop and strengthen coordination of public research programmes conducted at national or regional level in Member States. It provides a framework to network and mutually open national or regional research programmes, leading

34 http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7DetailsCallPage&CALL_ID=98#infopack

to concrete cooperation actions such as the development and implementation of joint programmes or activities.

Existing ERA-NETS on agriculture and water research for development are good examples of instruments to achieve such coordination or cooperation with developing countries. An ERA-NET on China enables Member States and Associated States to share information on their S&T cooperation and experience with China, representing a possible example for other regions of the world.

- Encourage the establishment of more ERA-NETS aimed at coordinating Member States' policies and programmes related to developing country regions.

Individually, Member States should consider how they can implement the policy recommendations outlined above for FP7 at their level. In particular they should consider how to:

- increase their funding for research in areas of specific interest to developing countries;
- improve dialogue with developing countries to identify research topics of relevance to them;
- facilitate developing countries access to results of research through better communication, encouraging/supporting the development of stronger enabling environments for uptake of research results and by addressing issues related to intellectual property ;
- contribute to the strengthening developing countries' research capacities; promote developing countries participation in their research programmes.

Member States have already undertaken efforts to mitigate the negative effects of researchers moving from developing countries to the EU.[35] In addition, the recommendations for encouraging European researchers to spend part of their carer in developing countries put forward in the section 'Mitigating Brain Drain' with recommendations for FP7 are also relevant for Member States.

With a view to increasing the funding for research on poverty-related issues and on strengthening research capacities in developing countries, Member States need to reflect on the adequate instruments and ensure coordinated use of their research and development programmes. This points to the need to address the institutional mechanisms for PCD both between policy departments and within the EU as a whole (see the example of France in the annex).

To have a successful implementation of joint policies and initiatives at Community level, strong coordination and exchange of information among development and research programmes is required. Development and Research policies have a common nexus if we want to achieve sustainable development – there is no sustainable development without research and innovation.

- Ensure better coordination of national and Community development and research programmes.

The private sector invests considerable amounts in R&D. It is therefore important to involve the private sector more in strengthening research capacity in developing countries building on the experiences and lessons learned from the European & Developing Countries Clinical Trials Partnership (EDCTP).

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[35] For a discussion of general measures to address brain drain, see the migration part of this chapter.

- Examine the interest and study the feasibility of public-private partnerships to strengthen research capacities in developing countries and to do research on MDG related topics.

4.4.3. The role of other policies in making research work for development: Information society, innovation, space, education, trade and migration

Information society, innovation, the use of space assets, education and migration policy also have an important role in unlocking the development potential of research policy.

Information Society

The establishment of an inclusive global Information Society Policy is crucial with respect to all three challenges identified. Improved ICT connections will facilitate the access of stakeholders in developing countries to research on MDG issues and their participation in international research programmes. ICT is also a powerful means against brain drain and towards more international exchange, since it allows researchers in developing countries to participate in international research endeavours while staying in their countries.

The major initiative to promote cooperation of researchers is GEANT2, an advanced pan-European backbone network that interconnects National Research and Education Networks (NRENs) across Europe. With an estimated 30 million research and education users in more than 30 countries across the continent connected via the NRENs, GEANT2 offers unrivalled geographical coverage, high bandwidth, innovative hybrid networking technology and a range of user-focused services, making it the most advanced international network in the world.

Through GEANT2 scientific cooperation between the EU and developing countries can be fostered, and the scientific community in developing countries can be integrated at global level.

- Extend GEANT2 to all developing countries interested (see example of Ubuntu-Net in the annex)

Innovation policy

Innovation policy can play an important role in harvesting the results of research for economic development in developing countries. The 2008 Global Economic Prospects Report (World Bank, 2008) stresses that innovation is an important part of the long-term answer to fighting poverty, disease and hunger in developing countries. Most of the growth in developing countries can be attributed to technology, in the widest sense, and not to capital or workforce. Global innovations and technologies developed domestically should both have a role to play, but the local adaptation of already available technologies shows the largest impact.

The gap between industrial countries and many developing countries on innovation matters is dramatically increasing. Countries like India and China are investing heavily in innovation, but many other Developing Countries seem to find it difficult to keep up with the expanding frontier of knowledge.

So far EU innovation policy has given little consideration to the international dimension of innovation processes and policies. Based on the experiences in innovation policy development and building of technological capabilities, learning networks are considered more relevant than classical approaches to technology transfer. Successful use of new technologies and processes relies largely on the capacity to absorb and adapt technologies. In addition, local skilled workers are a major innovation driver since they are more able to identify appropriate solutions, to source them and to implement them.

The EU - Medibtikar[36] project supports national bodies in Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Syria, the Palestinian Authority, Tunisia and Turkey in the development of innovation policies and innovation support infrastructures. It promotes regional cooperation among countries on the topic. As a result of this project some of these countries apply to cooperate with the new Enterprise Europe Network. The Enterprise Europe Network that assists companies in accessing innovative technologies and integrates local support organisations in a European wide network. It helps SMEs to share research results, participate in research programmes and apply for funding particularly from FP7.

Significant potential exists from combining foreign direct investment, including activities by not-for-profit organisations and SMEs, with actions to build local capacity or those addressing basic needs. Programmes like the GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit, the German international cooperation enterprise for sustainable development) 'Public Private Partnership' contribute significantly to building local innovation capacity.

Egypt uses funding from the European Neighbourhood Policy to support its research, development and innovation initiatives (see example in annex).

- Consider establishing innovation projects for developing countries following the Medibtikar approach with strong links to private sector development and regional integration.
- Facilitate cooperation of partners in developing countries with the Enterprise Europe Network

Space policy

Space applications, services and science can directly address achievement of the Millennium Development Goals (i.e. in particular those related to the management of natural resources and environment, education and health), as well as contribute to the creation of the required economic environment for advancing the MDGs (e.g. improvement of infrastructure and interconnection capacities supporting economic development, etc.). This has been recognised at highest political level on several occasions[37],.

In endorsing the new European Space Policy (ESP), the May 2007 Space Council called for "*making full use of the potential of space systems for sustainable development, namely in support of developing countries, in particular in Africa*."

As part of the new Joint Africa-EU Strategic Partnership, adopted at the December 2007 EU-AU Summit, the relevant Partnership on Science, Information Society and Space, includes a priority action for enhancing cooperation on space applications and technology.

The ESP and the Joint EU-Africa Strategy will be the basis for increased cooperation between Europe and Africa regarding the use of space assets and research for sustainable development. Navigation, Earth observation, satellite communications and sciences will be deemed a cross-cutting enabling tool in Europe's commitment to achieving the MDGs.

- A response strategy for making full use of the potential of space related assets for Africa needs to be based on clearly defined African priorities and needs, as well as African ownership. It will need to involve a targeted adaptation of European space services along

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[36] For more information see www.medibtikar.eu.

[37] including at the World Summit on Sustainable Development in 2002, the G8 Summit of Evian in 2003 and the World Summit on the Information Society, 2005 in Addis Ababa.

clearly identified African users' needs. A priority will be the preparation of an Action Plan on GMES (Global Monitoring for Environment and Security) and Africa by the end of 2009, in follow-up to the joint commitment by European and African stakeholders in December 2007 in Lisbon. In addition, it will need to include targeted and coordinated capacity building in order to enable African users and providers to make use of these and other space-based applications (including satellite telecommunication), services and relevant data. Finally, this process could catalyse the development in Africa of space-related science and technology, as well as related economic sectors and spark genuine cooperation with relevant European stakeholders.

Education policy

The availability of trained researchers is a necessary prerequisite for a country to be able to engage in research activities. This requires investment in developing countries' education sector not only at the primary but also at the secondary and the tertiary level. While investment in primary education may offer more direct benefit to a developing country, university education is needed for example to train teachers and thereby sustain primary education, and to strengthen the knowledge base of a country.

Researchers are normally trained in a country's own universities or by means of awards and scholarships for advanced training in other countries' universities.

At EC level a number of initiatives have been launched or are under development to improve the quality of tertiary education in developing countries, and these may involve the training of nationals of these countries in European institutions of higher education. The EDULINK programme promotes cooperation between universities in Europe and in developing countries. Through the ERASMUS MUNDUS programme scholarships are offered to high calibre third-country nationals to study or teach in Europe in a variety of fields at Master's level (so-called Erasmus Mundus Joint Masters).- The Programme also contains specific geographic 'windows' including one for students from ACP countries. Other windows cover Asian developing countries and western Balkan countries. Awards granted under a geographic 'window' are in addition to the opportunities which are available under the programme's 'core' budget. A separate Erasmus Mundus External Cooperation Window was also created in parallel to the existing ERAMUS MUNDUS programme as of the academic year 2007/2008. This separate programme presently supports partnerships between European and third-country institutions in EU neighbourhood countries, Asia, ACP countries and certain Latin American countries as well as providing scholarships for students from post-graduate up to post-doctoral level and for academic staff. The NYERERE programme, which is due to start in 2009, will support MA, PhD and Postdoctoral faculty exchanges between ACP universities.[38]Similar activities have been promoted by Member States, for instance, the Development Partnerships in Higher Education by the UK.

A problem frequently arising is that overseas courses for research personnel may focus on techniques and methods unsuited to the local research environment. Even where appropriate research methods have been taught, trained researchers may return home to find that their own university or technical institute lacks the equipment, supplies or skilled technicians needed to make research a viable activity.

- Take a balanced approach to investment in developing countries' education sectors combining support to primary, secondary and tertiary education in order to ensure sustainability at all levels.

[38] Other programmes include Tempus, Alfa and Alban for Latin America.

- Ensure that the training of highly skilled researchers goes hand in hand with the development of an appropriate infrastructure and capacity- building, thereby allowing trained personnel to pursue research interests without being constrained by inadequate facilities or shortages of equipment.

Trade policy

Access to results of research is as important as research itself. Intellectual property rights should strike the right balance between providing incentives for research through patents and ensuring access to the products of such research. Trade agreements address the trade related aspects of intellectual property rights and define developing countries' access to research results.

- When negotiating trade agreements that address IPRs, the EU should ensure that they contribute both to generating and transferring knowledge.

Migration policy

Migration policy can mitigate the negative effects of brain drain by enabling developing countries to benefit from the emigration of their researchers. Important in that respect is the encouragement of circular migration since it facilitates the (temporary) return of knowledge and competences by allowing researchers to return to their country of origin. The recently proposed European Directive on the conditions of entry and residence of third-country nationals for the purposes of highly qualified employment (European Blue Card) gives migrants the possibility of a "time-out", i.e. the possibility of returning to their country of origin or going to any other country[39].

To allow for circular migration it is also important to explore citizenships schemes looking at them in an innovative way, as this could make it easier for researchers to travel between countries and to function as a connector between research communities.

- Member States should further explore different avenues for citizenships schemes

4.4.4. EU development policy –investing in capacity building to unlock the development potential of research policy

From a coherence perspective, the role of development cooperation is to unlock the development potential of research policy. In that context the strengthening of both research policy and the capacities to do research are essential. FP7, which can only finance research activities, needs to be complemented with funding from development cooperation which can be spent on research capacity building (see example of South Africa in the annex).

In the past, research has not been high on the agenda of EC development cooperation. This situation is changing, not least because developing countries are prioritising this issue. In Africa, the continent facing the biggest obstacles in reaching the MDGs, the first African Ministerial Conference on Science and Technology (AMCOST) was held in November 2003. To implement its decision, the plan of action, which consolidates science and technology

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39 Excerpt from the proposed Directive:
'During the first five years of residence, the migrant can return to his home country or to any other third country for 12 consecutive months and for a total of 16 months –or more if the host Member States agrees- , without loosing any of his or her rights. This is an important change to the current legislation, as the existing Directive on long term residence status foresaw only 6 consecutive months and a total of 10 months. This period can even be extended for an unlimited period by the host Member States.
After five years, the migrant can **acquire the EU long-term residence status** and leave for a period of 12 consecutive months or more if the host Member States agrees.'

programmes of the African Union (AU) Commission and the New Partnership for Africa's Development (NEPAD) was drafted. Science, Information Society and Space was made one of the eight Africa EU Partnerships by the Africa-EU Summit in December 2007. The Joint Africa EU Strategy and the Africa-EU Partnership on Science, Information Society and Space, suggests important activities to support S&T capacity building in Africa and implement Africa's Science and Technology Consolidated Plan of Action (CPA). Development cooperation should support these existing S&T policies and integration frameworks such as the CPS.

The EC is going to launch a €35 million initiative with funding from the European Development Fund (€30 million) and the European Programme for Reconstruction and Development in South Africa (€5 million) to strengthen science and technology innovation and capacity building in ACP countries. Under the Food Security Thematic Programme of the Development Cooperation Instrument (DCI) it has allocated €233.1 million to agricultural research and development for the period 2007-2010. But further efforts are needed:

- Strengthen research policy capacity in developing countries ministries, possibly through twinning, as mentioned in the EU-Africa Partnership Agreement building upon good examples in this area launched by some Member States including Germany and the UK.
- Strengthen research capacity in developing countries with development funding: encourage partner countries to include S&T capacity building in NIP/RIP where appropriate and integrate research components into sectoral programmes, such as energy, water and health.
- Identify in the coherence section of the Country Strategy Papers opportunities for research cooperation with the EU, where appropriate.

Given the importance of Science and Technology for reaching the MDGs developing countries themselves should be encouraged to invest more in these sectors. They should thereby focus on areas of critical importance and build on existing infrastructure and competences.

- To encourage partner countries to establish S & T plans as part of the broader dialogue on governance

More importantly and more cost effectively, developing countries should increase efforts to cooperate better between themselves in regional alliances in science and technology and to share scarce resources to conduct science and generate technological innovations. Regional cooperation is also important so that all countries can benefit from capacity concentration in certain countries, while honing their national capabilities to take up results from regional efforts.

- Identify and promote the continued growth of regional research centres of the African Union financed with funding from the NIP/RIP and from Member States[40], such as cyber cities (example Egypt) or generally speaking research villages.
- Under the AU-EU Partnership on Science, Technology and Space work with developing countries to identify and strengthen existing centres of excellence and propose new ones if required. Consider proposing in the framework of the AU-EU partnership and study the need and the feasibility of joint EU-AU research initiatives on issues of common interest (co-funded with development and research funding).

[40] Fotis C. Kafatos, Paris, Institut de France, 23 October 2007.

EU and Member States development programmes can play an important role to better harness research results in poverty-reduction strategies and to allow local stakeholders to benefit from European research. Through development cooperation, developing countries can be helped to apply new research results to local situations and to address problems in these countries.

- Develop strategies to disseminate and apply research produced under FP7 and other research programmes to address local problems and to support poverty-reduction strategies.

4.5. Conclusion

The potential of research for developing countries is huge. European research policy can contribute to development by financing research in areas of particular relevance to developing countries, by sustaining and enhancing their research capacities through involving them in the international research endeavour, thereby promoting true brain circulation. This Paper makes recommendations for enhancing this potential of FP7 and European research policies. It also shows how this potential can be unlocked by using other policies such as information society, and migration to put developing countries in a better position to seize the opportunities offered by European research policies. Development cooperation should implement the necessary accompanying measures to strengthen both research policy and capacities to do research.

This Paper thereby provides an argument that spending development funding in a high leverage area such as research can increase the effectiveness of aid. This adds a new perspective to the debate on aid effectiveness. This debate, which has so far focused on procedures, should be expanded to a discussion on areas of cooperation. Focusing cooperation on directly related poverty areas is not sufficient. To achieve the MDGs, cooperation needs to be extended to high-leverage areas to enable the development potential of policies other than development to be harnessed.

I. Annex: *Research* – Best Practices

France has created an agency to coordinate research on development

In France, the "Institut de recherche pour le développement" (IRD) created the "Agence inter-établissements de recherche pour le développement" (AIRD) which brings together all the tertiary education and research institutions engaged in research and training on development. This agency has been tasked with coordinating and boosting research on development and capacity building in close partnership with research institutes and universities from developing countries.

South Africa complements support from the EU research programme with development funding

South Africa complemented the Framework Programme cooperation, which the country used to strengthen its knowledge-generation capacities to enhance global competitiveness, with support for S&T initiatives from the EU's development cooperation programmes for South Africa. In 2006 it reached an agreement on a Sector Budget Support programme for the South African Department of Science and Technology specifically aimed at enhancing the Department's ability to launch S&T interventions targeting poverty alleviation.

UbuntuNet Alliance link to GEANT2 enables faster collaboration for researchers and students in Sub-Saharan Africa

African research capacity has been boosted through a high-speed network link connecting the UbuntuNet Alliance to the international research community via the GEANT2 network. The

connection between the UbuntuNet Alliance and the GEANT2 network enables researchers and scholars in Sub-Saharan African universities and research institutions to share information and data and to collaborate with their peers in Europe and the rest of the world.

The UbuntuNet Alliance was founded in 2005 by the National Research and Education Networks (NRENs) of Kenya, Malawi, Mozambique, Rwanda and South Africa with the aim of establishing a research and education network backbone for Sub-Saharan Africa. Membership of the Alliance now includes also the NRENs of Sudan, Tanzania, Uganda and Zambia, and is open to all recognised African NRENs. As well as creating links between national research networks it aims to join Africa to the global research community, with this connection to GEANT2 the first step towards this vision.

Egypt : a grant for research and development

The new EU €11 million grant from the European Neighbourhood and Partnership Instrument will support the Egyptian government’s Research, Development and Innovation (RDI) initiatives. This new four-year programme will promote Egypt's participation in the European Research Area and encourage scientific linkages between research institutions and scientists from Egypt and the EU. Scientific cooperation is one of the main pillars of the Action Plan between Egypt and the EU under the European Neighbourhood Policy.