

**Youth Engagement  
in Agricultural Research for Development  
with a focus on Sub-Sahara Africa**

**Executive summary and recommendations**

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June, 2009  
Nijmegen, the Netherlands

Commissioned by Wageningen International



## **1. Introduction**

In developing countries, 75 percent of poor people live in rural areas and most of them depend on agriculture for their livelihoods. Agriculture thus remains vital for sustainable development, poverty reduction and food security. At the same time, among the young generation, interest in agriculture in general, and in pursuing careers in agricultural sciences seems to be low and young professionals largely seem to be missing in strategic and policy debates on agricultural research for development. Along with recently-renewed international attention for agriculture as a driver of economic development in countries in the south, new attention is thus also required for engaging young people in the future of agriculture.

This study aims to assess the present situation of youth engagement in agricultural research and examine some of the underlying factors that influence it. It further sets out to assess current relevant initiatives both within and outside of the strict realm of agriculture and aims to make recommendations for possible action. Special attention will be given to Sub-Saharan Africa where agricultural research is considered essential for economic development. This review is largely based on literature review and on data from secondary sources. In addition, key informants have been interviewed about particular initiatives.

Four key issues have been identified that influence the engagement of youth, especially in Sub-Saharan Africa, in agricultural research. These are: (1) career development of young professionals; (2) interest of youth in agriculture as a career choice; (3) quality of educational curricula, infrastructure and teaching methods; and (4) investments in agricultural research.

## **2. Youth in agricultural research: literature review**

### **2.1 Young professionals and their career development**

With the term 'young professional' we broadly refer to those people with limited experience in their respective field without limiting the definition to a specific age group. Young professionals in this broad definition also include (under-)graduate and post-graduate students. We will refer to high school students as a separate group as the main target area that needs to be addressed for this group is to develop their interest in agriculture rather than to develop their skills and careers (which should follow later).

Young professionals add value to organisations, departments and projects by bringing fresh perspectives and new approaches and skills. They provide morale through their enthusiasm and are more open and frank in the way they assess projects or ideas than their seniors. Young people are found to be much more at ease with change and complexity than their elders and, therefore, they often have the ability to adapt quicker to working in different circumstances, cultures and languages. Young professionals are often able to build collaboration and partnerships, as they tend to reject traditional hierarchical and inter-institutional relationships. Young people are usually also much more computer literate than their seniors and they are faster learners of new technologies. They are typically more aware of new products and modern tools and are more likely to experiment with them for adaptation to use in their environment. In addition, they often transfer their ICT skills to older colleagues (Cole et al., 2001).

However, young professionals often lack the life and work experience and the depth of knowledge to implement projects, which may result in errors or delays, and they may lack skills to negotiate or resolve conflicts. Time of senior staff that is required to train or supervise the young professional is often lacking. Young professionals are often on short-term contracts, which may hinder their full involvement in a project, as they do not have sufficient time to develop relationships with project partners. Moreover, the experiences gained and knowledge generated by these young professionals is not embedded in the organisation when their temporary contracts end. When young professionals have to deal with senior-level people they may not be taken seriously and their contributions may not be recognized or appreciated. This is especially the case in hierarchical organisations and societies. Strategic debate is normally undertaken at meetings and travel is in some cases seen as a 'privilege' for seniors. Young professionals also usually have a lack of access to decision-making levels (Cole et al., 2001).

## **2.2 Agriculture as a career choice**

Agriculture as a career choice is burdened with misperceptions and a lack of information and awareness. This is mostly due to uncompetitive wages, the physical aspects associated with work in the sector and the lack of awareness of what careers in the agricultural sector have to offer. The sector also has a negative image. (George Morris Centre, 2005).

Enrolment trends in post-primary agricultural education are not uniform in Sub-Saharan Africa and there is a lack of clear overview data. While some countries have witnessed increases in enrolment, others have seen stable or declining numbers. Students may have other reasons for enrolling in agricultural subjects at the secondary level than to work in the agricultural sector and they enrol, for example, because they are unable to attain the required grade in their examinations to qualify for their desired courses or due to financial constraints (VandenBosch, 2006).

Although there is a perception of declining interest in agriculture as a topic of study, the available data have shown that in most Sub-Saharan countries the absolute number of enrolment in tertiary education in the broad field of agriculture is increasing. However, there is a slight declining trend in the share of the studies of agriculture in the total enrolment in tertiary education. Data from 23 countries show that, on average, one out of twenty students in tertiary education chooses the broad field of agriculture. The share of women enrolled in agriculture ranges from 6.5 to 60.7, but overall a little over one out of four students enrolled in agricultural education at the tertiary level is female (<http://stats.uis.unesco.org/>, accessed on April 14, 2009).

## **2.3 Agricultural education and training**

Strong agricultural education and training systems are at the core of the productivity gains that are necessary for economic growth and poverty reduction in developing countries because they determine the quality of scientists, business professionals, teachers, and civil servants in all areas of agriculture. Education is necessary to build 'a critical mass of scientists'. This refers to both sufficient quantity and quality of graduates and it relies heavily on the availability, desirability and quality of agricultural higher education.

The number of African higher education institutions has substantially increased over time from less than 20 universities in 1960 to more than 200 by the early 2000s, with at least 96 faculties of agriculture or agriculture-related sciences. However, since the 1990s, investments in African agriculture and agricultural education have declined sharply (Beintema and Stads, 2006). The reduction in investments in education has eroded the quality and relevance of agricultural education in Africa. Enrolment in the various levels of tertiary education is unbalanced, with many students enrolled in the lower levels of the technical education and a smaller proportion that continues to post-graduate levels. There is a lack of linkage with other national and international institutes and the private sector, curricula are outdated, inflexible and irrelevant, there are shortages of qualified staff in agricultural education, and teaching methods and facilities are largely inadequate (World Bank, 2007).

## **2.4 Investments in agricultural research**

Spending on public agricultural Research and Development (R&D) in Sub-Saharan Africa increased rapidly during the 1960s. However, since then expenditure growth stalled for the region as a whole. In 2000, spending on public agricultural R&D in Africa was US\$1.5 billion in 1993 international dollars (Beintema and Stads, 2006). There are large variations among the countries. Out of a sample of 27 African countries, about half has experienced a contraction in agricultural R&D spending (some of more than 10 percent annually) whereas some other countries have seen a growth of 5 percent annually. Donor funding for agricultural R&D from institutes such as the World Bank, FAO, USAID and other bilateral donors, have declined and the private sector is contributing little: an estimated 2 percent of total research spending in Africa (Beintema and Stads, 2006).

More recently, however, due to renewed attention for agriculture and its role in economic development, both the African countries and international donors have renewed their commitment to agricultural research and education. In 2002, the African Ministers of Agriculture endorsed the Comprehensive Africa Agriculture Development Programme of the New Partnership for Africa's Development which aims to revitalize the agricultural sector (FAO, 2003). World Bank and other donors are also planning to spend more on the African agricultural sector as a whole.

The international agricultural research centres of the Consultative Group for International Agricultural Research (CGIAR) carry out a large share of international agricultural research in Africa. In 2003, they spent 45 percent of their total budget of US\$ 393 million on activities specifically related to Africa, equivalent to about 10 percent of total spending by the African national agricultural research agencies in 2003 (Beintema and Stads, 2006). Other international and regional organisations also conduct agricultural research in Africa. For example, the French Agricultural Research Centre for International Development (CIRAD) and Institute of Research for Development (IRD) together spent almost the same amount on research in Africa, US\$173 million in 2004, as the CGIAR centres together, although IRD also includes topics such as health in addition to agriculture and environment (Beintema and Stads, 2006).

## 2.5 Staffing of universities and agricultural research organisations

The National Agricultural Research Systems (or: NARS) in Africa have substantially grown from the 1960s. However, while the number of researchers increased six fold between 1961 and 2000, the number of support staff per scientist decreased drastically bringing the total number of staff to 72,000 in 2000, a decline of 25 percent since 1991 (Beintema and Stads, 2006). There is a high level of variation between African countries, both in terms of number and composition of staff. Staff composition in terms of gender is unbalanced although historical data from 14 countries reveals that the share of female staff grew slightly from 17 percent in 1991 to 21 percent in 2000 (Beintema and Stads, 2006).

Also in terms of age distribution in the African agricultural research and education institutions, there is a high level of differentiation among countries. A recent survey shows that in the francophone countries about 20 percent or less of the professional staff is 40 years old or younger. Furthermore, 25 percent of staff in Togo and Niger, 35 percent in Burkina Faso and 56 percent in Senegal is older than 50 years of age. In Ghana and Kenya, 35 percent of staff is older than 50 years of age, while in Nigeria this is 30 percent, and in South Africa 26 percent. On the other hand, in seven other countries in the survey (Ethiopia, Botswana, Malawi, Uganda, Zambia, Mozambique, Burundi) less than 20 percent of staff is older than 50 years of age and more than half of the professional staff is younger than 40 (Beintema, 2009).

The age distribution within Wageningen UR, the CGIAR, FAO, IFAD, WFP and the entire UN system is shown in Table 1. At Wageningen UR staff also includes the PhD candidates and administrative staff, explaining the large share of staff below 35 years of age. Conversely, the relative underrepresentation of younger scientists in the CGIAR is thought to be a consequence of the length of time that is required for completion of a PhD., the typical entry qualification to the scientist staff group (Jayasinghe and Moore, 2003). FAO has a relatively high proportion of staff in the oldest group, compared to the other organisations. The age distribution of staff at World Bank and other international organisations was not available.

**Table 1. Age distribution in selected organisations**

Age	Wageningen UR*	CGIAR**	FAO***	IFAD***	WFP***	total UN***
<35	22%	8%	8%	13%	16%	12%
35-44	59%	33%	24%	31%	36%	30%
45-54		39%	39%	40%	37%	37%
55 and over	19%	16%	29%	16%	11%	21%

Notes: \*WUR, 2008. Includes all staff; \*\*Jayasinghe and Moore, 2003. Includes scientist staff only and excludes post-doctoral fellows; \*\*\*UN, 2008, includes professional staff only.

## 3. Current initiatives

Many large and small scale activities exist related to youth engagement, education, capacity building, research and agriculture. According to information available on their respective websites the initiatives use approaches such as networking and partnerships, training, information generation and sharing, scholarships and research fellowships, giving hands-on experience, curricula development and many

other activities. Many of these initiatives aim at forging partnerships among research and educational institutions within Africa, and between African institutions and those in other continents. Some youth-led initiatives have also come up, showing that youths themselves observe that there is a lack of engagement in agricultural research and that discrepancies are present between the skills they have to offer and those that are desired by potential employers.

The initiatives were scored in terms of the problem area they address, the approaches they use, the target population of the activities and their specificity for agriculture and Africa and whether they are youth-led or not. Derived from the scoring matrix used for this exercise and the descriptions of the activities, the existing initiatives are grouped into six broad types, although some have activities related to more than one type. These six typologies are:

1. **Creation of interest in and / or commitment to agriculture and development:** Type 1 activities are most often directed at youth in general including, or sometimes especially, high school students. The activities involve information exchange, dialogue or networking activities and in some cases immersion in development or agriculture through direct implementation of projects. This category also includes some initiatives that aim at getting youth involved through different tools such as online communities, multimedia and art. Those initiatives that are related to creating commitment involve pro-active participation such as fund raising (Canadian Youth Challenge International) and actual development projects (Develop Africa Foundation).
2. **Capacity building and skills development:** Type 2 activities are mostly directed at young professionals, including (post)graduate students, active in agricultural research and / or development. The activities often involve trainings, information sharing and networking opportunities. Examples include the Young Professionals' Platform for Agricultural Research for Development (YPARD) and the African Youth Forum on Science and Technology (AYFST).
3. **Direct career development:** The third type of initiatives are also related to capacity building but they are more directly linked to individual career development. Similar to type 2 initiatives they are directed at young professionals, including (post)graduate students. The activities often involve training and specific hands-on experience, often with (substantial) financial support from governments or the private sector. While capacity building in Type 2 initiatives is often short-term, the type 3 activities last much longer and are broader. Examples are the Netherlands Associate Expert Programme of the Ministry of Foreign Affairs and the Advanced Master Policy and Practice in International Development of the Centre for International Development Issues of Radboud University in Nijmegen, the Netherlands.
4. **Improvement of the educational system:** This happens either through improving the quality of education by training teachers and improving curricula or by increasing the critical mass of scientists by providing scholarships for higher education in their home countries or abroad. Some initiatives aim to do both. The target group is thus most commonly graduate students and teachers or faculties. There is especially a great deal of initiatives that target the improvement of the general higher education systems, many of them specifically for (specific regions of) Africa. Examples include the Wageningen UR Sandwich PhD Programme and the activities of the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM).
5. **Strengthening of research:** The fifth group of initiatives aims at directly improving the quality of research through the creation of partnerships with regional or global universities and research centres, and through direct funding of relevant research projects. These initiatives are usually directed at the entire group of agricultural researchers, although some are specifically meant for recent graduates. Some also directly aim to improve infrastructure for research. Examples are SCARDA (Strengthening Capacity for Agricultural Research and Development in Africa) of FARA and the Rothamsted International African Fellows Programme
6. **Stimulation of innovation:** This usually happens through networking and dialogues between people from different backgrounds and disciplines to bring out new ideas that are "out of the box". Innovation in agricultural research not only matters for better and more sustainable development outputs, but will also help to eliminate the 'dusty' image of agriculture as a career choice. Examples of type 6 initiatives are the Business in Development Network and the Netherlands' National ThinkTank.

Gaps in the coverage of these initiatives exist such as limited attention for specific target groups (e.g. high school students, undergraduate students, the general public, the private sector, and policy makers). More specific focus on agriculture and Africa could also still be achieved as many initiatives target for example higher education as a whole or take place at the global level. This is especially important as the situation in different countries is dissimilar and approaches therefore have to be country specific. The use of information and communication technologies (ICT) including social

software, which is a range of software tools that allow users to interact and share data with other users, has seen an expansive growth in other sectors and has great potential to be expanded for agricultural education and research. Activities such as mentoring and networking could still be much more included as the interaction among juniors and between the juniors and seniors in the field is very important. New initiatives therefore have a potential added value if they concentrate on filling these gaps and address the specific problems of young professionals such as career development, temporary contracts, and options to attend seminars and policy debates.

#### 4. Suggestions for courses of action

In their common policy document of May 2008 entitled “Agriculture, Rural economic development and Food security”, the Netherlands Ministry of Foreign Affairs (specifically the Directorate-General for International Cooperation) and the Ministry of Agriculture, Nature and Food Quality have formulated their commitment to agricultural development and improvement of rural activities in developing countries along five specific priority tracks. One of these tracks is “Research and innovation to increase productivity in the context of climate change”. Among the main tools to achieve this are the strengthening of international research of the CGIAR centres and FARA, and increased investments in an innovative knowledge agenda by supporting regional capacity through existing initiatives such as the Comprehensive African Agriculture Development Programme (CAADP) developed in the context of the New Partnership for Africa’s Development (NEPAD) (LNV, 2008).

The present study outlines several other existing initiatives that aim to improve research and innovation, especially among the Type 5 and 6 initiatives described, that could provide a point of entry for the activities of the two Dutch Ministries involved. However, this review also shows that other problem areas such as education and career development need to be addressed as well in order to achieve sufficient local human resources and capacity and a favourable environment for agricultural research and development. Education is not part of the specific policy document of the two Ministries, but the Netherlands Initiative for strengthening Capacity in Higher Education (NICHE), a Type 4 initiative, shows an example of how the Dutch government tackles education (in all subjects) separately. As already indicated more specific focus on agricultural education could improve the effectiveness of the effort as well as have more impact on agricultural research and innovation in the long term.

Wageningen International was set up by Wageningen University and Research Centre to facilitate easy access to all their international services and products. Wageningen UR already works with international agencies, non-government organisations, businesses, knowledge institutes and foreign and Dutch ministries engaged with international development in the agriculture, food, rural development and natural resource management sectors. The added value of collaboration of Wageningen UR with the relevant ministries to achieve enhanced research and innovation for productivity improvement is therefore evident.

Based on the gaps identified in existing initiatives, the broad focus of the Dutch policy document and the strengths of Wageningen UR, this report suggests possible pathways to reach the full potential of youth in agricultural research in order to increase innovation and secure the future of agricultural research in Africa. The pathways are derived from the problem areas identified and are not mutually exclusive. Table 2 below, gives a complete overview of recommendations with examples of similar initiatives already taking place (some with a different focus) and ideas for new initiatives that could be developed.

1. **Stimulating career development of young professionals:** Although support for better development of young professionals has been growing among international organisations and the Netherlands Ministry of Foreign Affairs already facilitates the Associate Expert program, more attention is needed still for career development of young professionals in agricultural research. Therefore, (support for) better advocacy for young professionals among different types of national and international research organizations is necessary in order for them to recognize and capitalize on the assets of young professionals (enthusiasm, networking, ICT) and ‘mainstream’ youth within national and international research organisations:
  - Lobby for policies within national and international research organizations
  - Support and lobby for the revision of the structure and operations of organizations to strengthen the participation of young professionals and make sure that there are well-defined roles for young professionals in new proposals

- Negotiate “young-professional friendly” budgets and timelines with funders / organisations
- Ensure age balance in teams
- Design research projects that will be relevant to young people and future generations

Develop the capacity of young professionals to take part in agricultural research and policy debate by:

- Supporting and developing innovative mentoring and experience programs in agricultural research including internship, exchange programs and mentoring
- Being proactive in building the decision-making capacity of young professionals by gradually involving them in policy debate
- Giving more support to youth-led organisations both in terms of funding and mentoring
- Promoting pro-activeness among young professionals by giving more attention to what young professionals can do themselves to improve their engagement

There is also a need to make a more thorough assessment of the impact of short-term contracts on young professionals’ participation.

2. **Improving the quality of agricultural education:** This includes giving more specific attention to agricultural education and establishing partnership programs between African universities and their partners in the North for curricula development, improving linkages between undergraduate and post-graduate education in Africa, and involving the private sector in curricula development. These efforts can be supported by strengthening the information availability of trends in education enrolment by sector / topic. Advocacy among donors would also ensure that the new wave of interest in investing in African agriculture includes infrastructure for agricultural education.
3. **Increasing investments in agricultural research:** Apart from the increased investments for CGIAR and FARA already indicated in the Dutch policy document, this could also include the involvement of the private sector in research to stimulate investments and innovation.
4. An area that deserves mentioning but may be outside of the focus of the two Dutch Ministries and of Wageningen UR is the **creation of youth interest in agriculture**. This includes the creation of interest for agriculture among the general public in Africa, the creation of interest for agricultural careers among high school students and undergraduates through exposure and hands-on experience in Africa, more attention for employment and salaries in African agricultural sector, and improving the awareness of African policy makers for agricultural employment.

Regardless of the course of action chosen to improve agricultural research it remains crucial to give specific focus on Africa and agriculture. It is also important to make more frequent and more innovative use of ICT options.

**Table 2. Recommendations and examples**

Recommendation	Examples of existing initiatives	Comments / ideas
<b>General</b>		
Specific focus on agriculture and Africa	<p>Examples of initiatives that do both:</p> <ul style="list-style-type: none"> <li>- African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE)</li> <li>- African Youth Forum on Science and Technology (AYFST)</li> <li>- Alliance for a green revolution in Africa (AGRA)</li> <li>- Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)</li> <li>- Comprehensive Africa Agriculture Development Programme (CAADP)–pillar4</li> <li>- Programmes of the Forum for Agricultural Research in Africa (FARA): BASIC, PAEPARD, SCARDA</li> <li>- Rothamsted International African Fellows Programme</li> <li>- Regional Universities Forum for capacity building in agriculture (RUFORUM)</li> </ul>	
Make more frequent and more innovative use of ICT options	<p>Examples of tools:</p> <ul style="list-style-type: none"> <li>- grads-LinkedIn</li> <li>- Devex</li> <li>- Treemagotchi</li> <li>- Databases</li> </ul> <p>Initiatives that use ICT as a major tool:</p> <ul style="list-style-type: none"> <li>- AYFST</li> <li>- Research-Africa.net</li> <li>- TakingITGlobal</li> <li>- YPARD</li> </ul>	<ul style="list-style-type: none"> <li>- Use virtual social networks to create interest for agriculture among youth.</li> <li>- Support better profile and database development for young professional</li> <li>- CVs and jobs specific for young professionals</li> <li>- Involve (young) IT experts to come up with innovative uses of IT (e.g. YPARD has engaged private IT companies to donate time for website development)</li> </ul>
<b>Creating youth interest in agriculture</b>		
Create interest for agriculture among the public in Africa	<ul style="list-style-type: none"> <li>- World Food Prize of the Global Youth Institute</li> <li>- Youth Ambassadors for Rural Development (YARD)</li> <li>- Network of African Youths for Development (NAYD)</li> <li>- SPEAK AFRICA</li> <li>- Canadian Youth Challenge International (YCI)</li> <li>- Netherlands National Youth Council</li> <li>- Netherlands Third Chamber Parliamentary Initiative</li> <li>- Oxfam International Youth Parliament (OIYP)</li> <li>- TakingITGlobal</li> <li>- YouthActionNet</li> </ul>	<ul style="list-style-type: none"> <li>- Use more innovative media and ICT tools to reach the public such as through media and art (e.g. SPEAK AFRICA)</li> <li>- Involve the public more in policy and promoting it in their community (e.g. Netherlands Third Chamber)</li> </ul>
Create interest for agricultural careers among high school students and undergraduates through exposure and hands-on experience in Africa	<ul style="list-style-type: none"> <li>- Wageningen UR high-school days when high-school students can experience a day at university</li> </ul>	<ul style="list-style-type: none"> <li>- Partner with African universities to achieve better promotion and hands-on experience for high-school students about to choose their higher education</li> </ul>
Give more attention to employment and salaries in African agricultural sector and improve awareness of African policy makers for agricultural employment		<ul style="list-style-type: none"> <li>- Lobby with policy makers in Africa</li> </ul>

Recommendation	Examples of existing initiatives	Comments / ideas
<b>Improving the quality of agricultural education</b>		
Give more specific attention to agricultural education	<ul style="list-style-type: none"> <li>- Alliance for a green revolution in Africa (AGRA)</li> <li>- Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)</li> <li>- Forum for Agricultural Research in Africa (FARA) - BASIC</li> <li>- Regional Universities Forum for capacity Building in Agriculture (RUFORUM)</li> </ul>	
Establish partnership programs between African and developed country universities and private sector for curricula development and education	<ul style="list-style-type: none"> <li>- African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE)</li> <li>- AgrowKnowledge (AK)</li> <li>- Development Partnerships in Higher Education Programme (DeHPHE)</li> <li>- Forum for Agricultural Research in Africa (FARA) - BASIC</li> <li>- Wageningen UR sandwich program</li> </ul>	
Improve linkage between undergraduate and post-graduate education in Africa		
Ensure that new wave of interest in investing in African agriculture also includes infrastructure for agricultural education		
Strengthen information availability of trends in education enrolment by sector / topic	<ul style="list-style-type: none"> <li>- AET Africa portal on agricultural education in Africa <a href="http://www.aet-africa.org/">http://www.aet-africa.org/</a></li> <li>- International network for higher education in Africa</li> </ul>	<ul style="list-style-type: none"> <li>- Help to strengthen existing information gathering initiatives</li> </ul>
<b>Increasing investments in agricultural research</b>		
Involve the private sector in research to stimulate investments and innovation	<ul style="list-style-type: none"> <li>- Netherlands ThinkTank</li> <li>- Business in Development Network</li> </ul>	<ul style="list-style-type: none"> <li>- Develop innovative model in which Dutch private sector can support innovative research in Africa</li> </ul>
Increase investments in agricultural research of international donors	<ul style="list-style-type: none"> <li>- 'New' donors are coming up: Bill &amp; Melinda Gates foundation, Ford foundation, Carnegie etc.</li> <li>- Renewed attention for agriculture: WorldBank stepping up investments</li> </ul>	<ul style="list-style-type: none"> <li>- With present economic crisis private sector donors may withdraw</li> </ul>
<b>Stimulating career development of young professionals</b>		
Recognize and capitalize on the assets of young professionals (innovation, enthusiasm, networking, ICT)	<ul style="list-style-type: none"> <li>- Netherlands ThinkTank (capitalize on innovation of youth)</li> <li>- Young Professionals' Platform for Agricultural Research for Development (YPARD) (lobby &amp; advocacy)</li> </ul>	<p>'Mainstream' youth:</p> <ul style="list-style-type: none"> <li>- Lobby for policies within national and international research organizations</li> <li>- Revise the structure and operations of organizations to strengthen the participation of young professionals and make sure that there are well-defined roles for young professionals in new proposals</li> <li>- Negotiate "young professional friendly" budgets and timelines with funders</li> <li>- Ensure balance in teams</li> <li>- Design research projects that will be relevant to young people and future generations</li> </ul>

Recommendation	Examples of existing initiatives	Comments / ideas
Support and develop more innovative mentoring and experience programs in agricultural research including internship, exchange programs and mentoring	<ul style="list-style-type: none"> <li>- Netherlands Associate Expert Program</li> <li>- Young Professional programmes at the World Bank, Asian Development Bank, African Development Bank and Inter-American Development Bank</li> <li>- Australian Youth Ambassadors for Development (AYAD)</li> <li>- CIDIN advanced Master programme</li> </ul>	<ul style="list-style-type: none"> <li>- Develop such programmes within other national and international research organizations</li> </ul>
Be proactive in building the decision-making capacity of young professionals	<ul style="list-style-type: none"> <li>- CTA S&amp;T advisory committee (YP involvement)</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure this takes place within national and international research organizations</li> <li>- Slowly involve young professionals in policy debate</li> </ul>
Promote pro-activeness among young professionals. Give more attention to what young professionals can do themselves to improve their engagement	<ul style="list-style-type: none"> <li>- FairFood volunteers</li> <li>- CIDIN advanced Master programme</li> </ul>	<ul style="list-style-type: none"> <li>- Volunteer work, experience programs, internships, stimulate pro-active attitude</li> </ul>
Give more support to youth-led organisations both in terms of funding and mentoring	<ul style="list-style-type: none"> <li>- YPARD (senior advisory committee)</li> <li>- AIESEC International</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure good mentoring and guidance of youth-led organisations without taking over</li> </ul>
Make a more thorough assessment of the impact of short term contracts of young professionals		<ul style="list-style-type: none"> <li>- Within national and international research organizations. Starting point could be Wageningen UR</li> </ul>