



THE BIO-EARN Newsletter

A Publication from the BIO-EARN Regional Co-ordination Office
Issue No.5, June 2008 – June 2009

Editorial

The strategic goal of the Eastern African Regional Programme and Research Network for Biotechnology, Biosafety and Biotechnology Policy Development (BIO-EARN) Programme has been to develop an Eastern African research for development (R4D) platform and infrastructure that can in the medium and long-term greatly contribute to improved livelihoods and environmental sustainability and reduce poverty in line with regional and international initiatives.

To date, the BIO-EARN programme has been running for three years. During this period, the programme has made good progress in implementation of programme/project activities. Judging from the quality of BIO-EARN scientific papers presented during the scientific conference in November 2008 and observations made during the Monitoring, Evaluation and Learning (M, E&L) exercise undertaken between September and October 2008, the programme has achieved a lot towards meeting the target outputs.

Analysis of technical reports, presentations and field observations indicate that BIO-EARN Programme implementation has progressed extremely well by most measures and the programme scientists are committed to the BIO-EARN cause. They have also risen to the challenge of quality and responsibility in very demanding circumstances. The overall status of programme/project planned activities and progress of their implementation in the region is commendable. The analysis also reveals that BIO-

EARN projects were carefully designed to deliver concrete demand driven outputs/outcomes and the Programme has consolidated its presence in the region as a dynamic, innovative and results-oriented initiative.

In the area of agriculture, tools with agronomic potential to enhance breeding and production of principal crops such as cassava, sorghum and sweet potato have been identified. With regard to environmental health, value addition to agro-industrial wastes, efficient and sustainable technologies for bio-energy and treatment of high-strength waste water for environmental sustainability have been developed. Furthermore, the programme projects have significantly contributed towards strengthening of human and infrastructure for Research and Development (R&D) capacities in several partner institutions. Supportive policies and Intellectual Property (IP) management systems for product development and deployment have been promoted and opportunities for forging public-private partnerships explored and strengthened. It is anticipated that with the various technologies, tools and products arising from the various projects under implementation being adopted, the programme will greatly contribute to the region's food security and nutrition, environmental sustainability and poverty alleviation.

The result-based management training and project self-assessment exercise recently held in April 2009 streamlined and refocused the project logical frameworks. With a few months to the end

The Eastern Africa Regional Programme and Research Network for Biotechnology, Biosafety and Biotechnology Policy Development (BIO-EARN) was established in 1998 to promote collaboration in biotechnology and biosafety among the following countries: Ethiopia, Kenya, Tanzania and Uganda. The programme aims to strengthen national and institutional capacity to assess, develop and implement effective policies for technology development and dissemination, and to facilitate the establishment of biosafety regulatory structures.

of the programme agreement period, the projects need to put their efforts on activities that will add value to the achievements made so far in order to realize the programme/project goals.

The programme management organs together with agreement partners will do everything possible

to support the project teams to accomplish the remaining project activities. At the same time, the BIO-EARN fraternity is challenged to play an active role in development of the new programme which will build on the ten-year successes of BIO-EARN to further contribute to regional development.

Key Events since June 2008 – May 2009

Project Monitoring and Evaluation: General Observations and Recommendations

The Regional Coordination Office (RCO) conducted a monitoring and evaluation exercise between September and October 2008. The Monitoring and Evaluation (M&E) team visited laboratories in all the regional participating Institutions and selected field experiments. Together with the scientists and students, the progress of project activities implementation and limitations was assessed.

The BIO-EARN scientists and collaborators are commended for their efforts as the overall implementation of the activities were found to be on-course by most measures.

Considering that the objectives of Project 9, on Enset agro-processing for starch were ambitious, and that the project was lagging behind, it is recommended that the project objectives and budget be reassessed.

The nature of the programme design and approach linking individuals within and outside the region in a coordinated interaction introduced need for effective communication and information flow as well as efficient coordination of activities within and across projects. RCO should maintain vigilance on general oversight and stewardship.

With regard to IP issues, much as they are becoming relevant to all projects, programme scientists are not well vast with them. It is recommended that the scientists get exposed to IP management and be equipped with the basics of technology negotiation to facilitate the transfer

and application of technologies accruing from BIO-EARN activities. There is also an urgent need for a framework for vertical exchange of research material among scientists and institutions.

With respect to technical and financial accountability, the professional profile of BIO-EARN scientists and participating institutions provide assurance that they have capacity to grasp the mandate and operational requirements of the programme, translating them into action and ensuring that planning and budgeting of activities, and technical and financial accountability match with Programme. The RCO should maintain on general oversight and stewardship.

In view of the procurement difficulties experienced and given that different countries have different procurement policies, it is recommended that BIO-EARN scientists acquaint themselves with national and institutional procurement procedures and initiate procurement processes early to avoid bureaucratic delays.

The lack of a structure for linking in-country Programme teams undertaking different project activities within a country is a limitation and a challenge to be addressed in the next Programme. It is recommended that coordination of BIO-EARN activities within a country be strengthened.

BIO-EARN's commitment to capacity building is being achieved through collaboration amongst

Towards achieving BIO-EARN's Capacity Building Targets

regional participating Universities and research institutions with partners outside the region such as Swedish and Finnish Universities, and other advanced laboratories. This collaboration has concentrated mainly in the areas of training and skills development. This research collaboration needs to be strengthened further by increased South to South linkages with relevant partners.

The overall quality of research and research outputs and training in all the projects is commendable. Generally, the level of efficiency of projects implementation is satisfactory despite institutional and team-related drawbacks that appear to constrain the speed and quality of implementation. These have among others included; delays to access research funds, bureaucratic procurement process, poor quality of purchased laboratory supplies and consumables, non-functional team members and lack project team motivation compared to other similar projects.

In conclusion, BIO-EARN is without doubt, a successful initiative whose impact of outputs are systematically building up. It is important to plan in advance and lay down a strategy for BIO-EARN's future with full involvement of all key stakeholders in the region.

A total of 46 graduate students (M.Sc. = 33; PhD = 11 and Post-Doc = 2) were recruited since 2006 to undertake research activities on the BIO-EARN projects. Out of the 46 graduate students 36 were fully funded by BIO-EARN Programme while the remaining 10 are co-funded with other stakeholders through collaborative efforts.

The increase in total number of students trained under the Programme was possible due to: (i) recruitment of students who had finished their coursework and, (ii) co-funding from other projects at some network institutions. This joint venture has greatly beefed-up the capacity building component of the Programme.

By December 2008, a total of 24 M.Sc. had completed their studies while 9 students were expected to finalise in the course of 2009. Majority of these M.Sc. students presented papers during the Scientific Conference held in November 2008. However, the PhD students are expected to complete during 2010.

Status	MSc.	PhD	PostDoc	Total
Recruited	33	11	2	46
Finished in 2008	24	0	0	24
Ongoing training	9	11	2	22

Students' completion status by December 2008

The increased human resource in biotechnology capabilities is expected to boost the capacities of the region to utilize biotechnology in national and regional development.

The BIO-EARN and its associate network, the VicRes Programme, in collaboration with the Uganda National Council for Science and Technology (UNCST) and the Inter-University Council for East Africa (IUCEA), organized and hosted a Scientific Conference at Speke Resort, Munyonyo, Kampala, Uganda between 24th–26th November, 2008. The Conference theme was “Harnessing Bio-resources for Social Economic Transformation for Eastern Africa”. The conference goal was to bring together research stakeholders to share and appreciate contribution of research findings to make change and to provide researchers with an opportunity to chart for bio-resource agenda for the future.

The conference which had over 153 participants, focused on three major sub-themes namely: (i) Productivity and Value addition of bio-resources, (ii) Sustainable management of bio-resource base, (iii) Bio-policy and Innovation systems. During the three day conference, 39 plenary papers were presented in seven sessions with 29 papers in productivity and value addition, 4 papers on sustainable management of bio-resources, and six (6) papers on bio-policy. Approximately 72% of the oral papers presented were authored by BIO-EARN research teams. The presentations were crowned with a panel discussion during which topical issues arising from the presentations discussed by eminent scientists and policy makers. In addition to oral papers, a poster and exhibition session was also organized. This had twelve (12) posters and six (6) exhibitions on on-going innovation/technology up-scaling projects.

Field excursions to two BIO-EARN partner institutions; National Crops Resources Research Institute, Namulonge and Kampala City Abattoir exposed the conference participants to Agricultural and Environmental biotechnology experimental sites and enabled the conference participants interact with the participating scientists and exchange of ideas and experiences. The visits also presented to the conference participants

technologies and facilities available in their respective institutions.

The conference drew participants from Ethiopia, Kenya, Tanzania, Rwanda and Burundi, Finland, Netherlands, South Africa, Sweden and USA, with a total of 153 participants of which, 39.86% were from BIO-EARN, 8.49% from Vicres and 51.63% from collaborators and other stakeholders. Among the key speakers were Swedish Ambassador in Uganda, H.E. Anders Johnson and Prof. Ruth Oniangó (PhD, Professor of Food Science and Nutrition, holder of Silver Star and Distinguished Service Medals, former member of Kenya’s ninth parliament) who challenged the scientists to ensure products of research are utilized for development.



Prof. Ruth Oniangó, presenting a keynote paper.



Swedish Ambassador in Uganda, H.E. Anders Johnson making opening remarks

The 4th BIO-EARN Programme Advisory Committee Meeting

BIO-EARN Programme Advisory Committee (PAC) held its 4th meeting at ILRI Campus, Addis Ababa, Ethiopia on February 17-19, 2009, with attendance of a total of 31 participants that included nine PAC members and 19 other invited project scientists and stakeholders. The Regional Coordination Office presented an overview of the Programme status report, while the Principal Investigators (PIs) and Co-PIs presented project activity reports for 2008 and planned activities and budgets for 2009 for the 5 research projects and the four Innovation Fund (IF) projects. During the general discussions on the project progress reports and plans for 2009 that followed, PAC recommended that for ease of assessment of progress, reporting of all the project activities should be based on mission, vision and objectives as given in the project log-frames. It was noted that there was considerable progress in scientific research amongst all the projects, and that the projects have made substantial progress in generating a lot of outputs which need to be well packaged for sharing in the region. Specific issues pertaining to specific projects were discussed and recommendations made for implementation.

The Regional Coordinator presented a concept for the new programme and after discussions the participants formed groups to map out the goal, objectives, scope and broad thematic areas for the new programme. The PAC also agreed on the process and skeleton structure for the new programme proposal.

The consensus was for the new Programme with the overall programme objective as “Bioscience based products and innovation systems contributing to socio-economic development in the Eastern Africa region”.

Four Programme thematic areas were agreed as:

1. Improved crop productivity & quality food & nutrition security
2. Enhanced support to take agricultural, environmental & industrial bioscience to market place;
3. Bio-policies for sustainable harnessing of bio-resources developed & promoted;
4. Technologies for bioremediation and sustainable waste management developed & promoted.

A committee to spearhead the drafting process was selected to further develop the concept into a full proposal in consultation with stakeholders for submission to Sida in June 2009.

The 4th BIO-EARN Programme Governing Board Meeting

BIO-EARN Governing Board (GB) held its 4th meeting at Fairmont Hotel, Zanzibar, Tanzania, 17-18th March, 2009, with attendance of a total of 11 participants that included seven GB members and four others in attendance.

The BIO-EARN Programme outputs from ongoing activities and potential outcomes from the current activities under implementation were presented and discussed. The Board acknowledged that there was a lot progress made towards achieving project and programme goals. Programme implementation challenges some of which were procurement problems related to equipment and reagents faced at participating institutions and proposed solutions were also discussed and the GB made recommendations on steps to be taken to be taken to address the implementation challenges.

The new Programme Concept Note was presented to the GB by the RCO, highlighting areas of differences from the past programme activities, focus, scope, geographical coverage, and management structure. It was noted that the new Programme will build on to and consolidate past achievements of BIO-EARN Programme in responding to regional challenges thus feed into regional agenda. The GB members endorsed the development of the new programme proposal.

Extension

The 4th PAC meeting noted that although a lot of progress had been achieved in projects' activity implementation, there were various activities in projects that will not have been completed by December 2009. The most affected activities are the policy activities, the Innovation Fund Projects (Projects 6-9 which had just started), and the training of PhD students within Projects 1- 4. PAC therefore, recommended to the 4th Governing Board Meeting to consider a request

for a budget neutral extension of the BIO-EARN Programme agreement period. In the light of this, the Governing Board discussed and directed the RCO and IUCEA to pursue and present a request to Sida for a no-cost or budget neutral extension of programme activities for a period of six (6) months for projects and 9 months for RCO to enable full implementation of activities that will not have been concluded by December 31, 2009.

BIO-EARN Research Teams Trained in Results Based Management

The BIO-EARN Programme organized and conducted a Result-Based Management Training and Self-assessment exercise between 31st March and 2nd April, 2009 at Hotel Intercontinental Nairobi, Kenya. The training workshop was attended by two selected members (PIs & Co-PIs) from the nine BIO-EARN projects, a representative from Governing Board; a representative from the Programme Advisory Committee and members from the new Programme Proposal Drafting Team.

The three days' workshop, was facilitated by a Consultant from AIMS, and was divided in two parts namely; part 1 (1 ½ days) was devoted to training in Results Based Management (RBM) and using the RBM tools in the second part of the workshop to assess the implementation of the project activities and review the project s' log frames. This exercise assisted in identifying outcomes and re-focus on the critical areas of the respective project's in order to achieve the overall BIO-EARN Programme objective. Furthermore, the exercise was used to guide the projects to redefine the existing log frames taking into account recent PAC comments on the project activities. The resultant revised log frames have been the basis for planning activities for 2009 and justify the need for a budget neutral extension period for some of the projects. The results of self-assessment have also laid ground for development of a new Programme proposal to be submitted to Sida by June 30, 2009.

The BIO-EARN Programme Formally Ends December 2009: Stakeholders Ponder About the Future!

As the third phase of the programme closes to an end on December 31st, 2009, the RCO and stakeholders are drafting a new programme proposal that builds on achievements of all the phases of BIO-EARN programme. The Concept note of the New Program was presented by the Regional Coordination Office and discussed during the February 2009 PAC meeting. A four members' proposal drafting team was constituted, consisting of one PAC Member (Dr Gabrielle Persley), two Scientists (Dr. Patrick Okori & Dr. Seyoum Leta), and a representative from Regional Coordination Office (Dr. Anne Wangai).

The refined the concept note in-line with PAC inputs was presented to the Governing Board Members on March 17-18th, 2009 and approved with further inputs.

The Vision of the new Program is to develop Bio-resource innovation systems that will inspire and contribute to sustainable economic growth in agriculture and related industrial sectors; improving food and nutritional security, poverty alleviation and better environmental management in the region. The new Program would be a technology and policy platform financed via an Innovation Fund that operates through a competitive research funding scheme, addressing priority themes in food, agriculture and environment.

There would be a number of strategically developed calls for proposals in specific Programme priority areas within food and agriculture and the environment. The Bio-resource Innovation Fund would be open to applicants from Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda. The new Bio-resources Innovation Fund will be operated on the basis of excellence and the ability of applying partners to deliver the results. The programme will continue to actively collaborate with broad range partners involving key national, regional and international institutions in the region.

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a) The BIO-EARN Programme Documentary



The BIO-EARN Programme has undertaken a number of activities which directly or indirectly contribute to regional and national development of partner countries since its inception in 1998. As part of the Programme awareness and publicity activity, a documentary of the Programmes past and present activities and outcomes and future focus has been produced in two promotional videos targeting different audiences.

The filming of programme activities and interviews with some project team members was conducted between September and October, 2008 by iVAD International Ltd. DVD copies have been distributed to network institutions for Programme promotional activities.

b) BIO-EARN Calendar for 2009

A calendar for 2009 highlighting key programme events and activities was developed, published and distributed to network partners.

Makerere University: Rebuilding a reputation

Peter Wamboga-Mugirya, Scifode
11 March 2009



Makerere University was founded in 1922 as Makerere Technical School. Fostering a research culture has put Uganda's Makerere University back on its feet and is inspiring others, says Peter Wamboga-Mugirya.

Dr. Patrick Okori, a crop scientist at Makerere University in Uganda, is breaking a departmental habit of 40 years. He is employing a post-doctoral fellow.

"Today," beams the triumphant scientist from behind his spectacles, "I have been able to employ the very first postdoctoral fellow in the department. And I have also trained 17 postgraduates, 14 MSc and three PhD over the last four and a half years."

Across the university other scientists tell similar stories as Uganda's highest seat of education gradually regains its prestigious reputation of 40 years ago. Dr. Okori certainly feels this first goal has been successful. After training abroad he might have returned to a harried researcher's existence with few tools, little money and inadequately trained staff. Instead, he has a new laboratory and settling-in funds. Dr. Okori and his collaborators plan to train up to 17 more graduate students in the next four years.

BIO-EARN Programme is proud of contributing to rebuilding Makerere University's reputation. Visit www.scidev.net for the fully article.

Saturday, 03 January 2009

Addis Ababa, January 3 (WIC) – BIO-EARN, an East African regional network for the development of Biotechnology, announced that it is working toward promoting the application of biotechnology in agriculture, industry, and environmental management in order to contribute for the sustainable development of the country.

BIO-EARN project and research coordinator, Shumu Teferra told WIC that the project is working to develop a network of excellence that will significantly contribute to improve food security, sustainable environment management, industrial production and enhanced livelihood in Ethiopia.

He said the organization, together with the Addis Ababa University and the Ethiopian Agricultural Research Institute, is undertaking various researches in Ethiopia including development of biotechnologies to improve biotic and abiotic stresses in Sorghum.

According to the coordinator, the project is also working to release virus-resistant cassava and sweet potato varieties and innovate seed delivery system for sweet potato and cassava at the Awash Melkasa research institution.

Development of improved technologies to utilize industrial and agricultural waste with a view to producing bio-energy and value-added chemical is also underway, he indicated.

He called upon government and other pertinent bodies to exert efforts on research and technology development in a bid to improve industrial productivity and create science-based business enterprises.

BIO-EARN is an East African regional program and research network working for biotechnology, bio-safety and biotechnology policy development in Uganda Ethiopia, Kenya, and Tanzania.

BIO-EARN, an East African regional network for the development of biotechnology, said that it will promote the application of biotechnology in agriculture, industry, and environmental management in order to contribute to sustainable development in Ethiopia. BIO-EARN project and research coordinator, Shumu Teferra, said that together with the Addis Ababa University and the Ethiopian Agricultural Research Institute, the

network will conduct research to address biotic and abiotic stresses in sorghum. BIO-EARN will also release virus-resistant cassava and sweet potato varieties and innovate seed delivery system for sweet potato and cassava at the Awash Melkasa research institution.

Visit http://www.waltainfo.com/walnew/index.php?option=com_content&task=view&id=5904&Itemid=45 for more details of this article.

Aidah Nanyonjo
6 January 2009

Kampala — LABORATORY experiments for the genetically modified (GM) cassava have been completed and the National Crops Resource Research Institute (NCRRI) Namulonge has sought permission from the National biosafety committee to transfer the genetically modified cassava from the green house to the field.

“We are through with the laboratory work. If our application gets a favorable consideration by committee, we shall have the first genetically modified cassava in the field. We have all the tools that can be used to genetically improve the type of cassava we have today in the country,” Dr. Yona Baguma, a researcher said.

One of the roles of the national biosafety committee is to ensure safe conduct and safety of the biotech products to human beings and the environment. The cassava plants shall be subjected to various tests. Recently, the research institute came up with crop materials that combine resistance to both cassava mosaic and cassava brown stem disease.

Researchers have used the technology to impart genes of resistance to cassava mosaic, which is caused by a double stranded virus and cassava brown stem that is caused by the single stranded virus.

“We developed 12 cassava resistant and high yielding varieties. Unfortunately the ten have been attacked by cassava mosaic and brown stem diseases. The two remaining varieties have stood the test and we want to put them into the field to test their performance,” Baguma said.

He said to come up with best cassava varieties Ugandans have to use of biotechnology best approaches. According to him, if the field trial succeeds, the products that would be generated will be disseminated to the local farmers.

Baguma said famine maybe felt in some areas of the country due the extinction of most staple foods caused by the pest and diseases.

He said that cassava has been invaded by the mosaic and brown stem while black sigatoka and banana weevils are a threat to East African highland bananas.

According to the scientists, cassava mosaic and cassava brown streak disease are the most important constraints affecting cassava production in Uganda and most parts of Africa. The research aims at improving CMD resistance genes while retaining the superior storage root traits. Baguma was speaking during a workshop on biosafety and biotechnology held at Imperial Royale Hotel on Thursday.

From The Daily Monitor

Ethiopia: Landmark bio-safety legislation approved

Posted by Mehret Tesfaye | July 15th, 2009 at 2:07 pm |

Addis Ababa — Aiming to save the nation from the adverse effects of genetically modified organisms (GMO), a new Proclamation on Bio-Safety was approved by parliament last week.

Drafted by the Federal Environmental Protection Authority (FEPA), this landmark legislation, which various environmental groups and local consumer associations have been calling for, contains various regulations aimed at protecting human and animal health, and biological diversity, by managing and even totally avoiding GMO threats.

The draft bill was among agenda items, but was never discussed in the first meeting of the Environment Council. The council's membership includes ministers, regional presidents and a civil society representative, Negusu Aklilu, Director of the Forum for the Environment (FfE).

"We had finished our part preparing the bill based on the international bio-safety law, with local characteristics," Teweldeberhan Gebregziabhere (PhD) head of FEPA commented to Capital back in December last year.

The Council, which was founded two years ago, and held its first meeting on April 23 last year under the chairmanship of Deputy Prime Minister Addisu Legesse finally approved the draft bill and sent it to cabinet which endorsed it and passed it onto parliament. Parliament unanimously approved the bill last Tuesday in the final general session of the year.

Empowered by the new legislation, FEPA will shortly establish a National Bio-Safety Clearing House that will keep detailed records of experts that specialise in modified organisms in order to monitor their activities. The clearing house will also determine a list of modified organisms that have been rejected or approved for import and export and make the information available.

The unauthorised importation of GMO foods was a concern for various groups, such as the Eco Consumer Association which advocated for a ban for quite some time.

"We are hearing reports of genetically modified teff. There are groups waiting for the opportunity to dump their products," Gebremedhin Birega, Director of Eco had cautioned participants of last year's FfE annual conference.

The pioneer in GMO research in the United States uses what is called substantial equivalence regulation. International publications explain the approach as a liberal one which looks into whether GM foods have similar health and nutritional characteristics with a natural food type provided that they are safe to use.

The precautionary principle is a more popular approach for many countries, including those in the European Union.

"If an action might cause severe or irreversible harm to the public or to the environment, in the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who would advocate taking the action," the approach's rationale is explained in one publication.

Accordingly, the principle states there is a responsibility to intervene and protect the public from exposure to harm where scientific investigation discovers a plausible risk in suspected GMO cases.

Experts who studied the latest Ethiopian regulations say the regulators clearly sympathised with the latter approach. The new law says any transit, import and production should be done only with a written consent granted by FEPA.

Violation of various stipulation included in the legislation could mean a prison term of up to 15 years.

- By Kirubel Tadesse | Capital Ethiopia

Upcoming events

Updating the Website

The BIO-EARN website updating exercise has been ongoing. This has involved change of host, restructuring of the old web-structure and updating the information. You will be informed of the re-launching of the restructured website. We thank you for bearing with us while this exercise is going on.

Monitoring, Evaluation and Learning (M, E&L)

During 2009, only one Monitoring, Evaluation and Learning exercise will be undertaken. The exercise as usual will address both technical and financial components. The exercise will in particular endeavour to assess to what extent each of the partner project component has contributed to achievement of the overall project goal. Use of the revised log frame in relation to project component outputs will be emphasized. Network partners will be informed of the schedule for the exercise ahead of time.

MAS Workshop

Based on training needs assessment generated during the December 2008 Project management meetings, project team's skills enhancement in marker assisted selection tools and bio-informatics was scored highly. Consequently, the RCO in conjunction with BecA are organising to conduct a training workshop in this area. Project teams have been informed to nominate participants for the few positions that are available.

Announcements:

New Programme Proposal Drafting

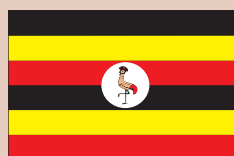
The new program proposal drafting team finalised developing a new programme proposal entitled "Bio-resources Innovations Research Network for Eastern Africa Development" (Bio-Innovate) was submitted to Sida by the Governing Board Chairperson. The potential new Programme when approved for funding is expected to run for four years (2010 – 2013). Implementation of the Bio-Innovate Programme is expected to build on and crystallize the achievements of the BIO-EARN Programme for regional development.

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