



**Letter of Interest Form**  
**All applicants MUST use this form to apply**

Development Innovation Ventures (DIV) identifies, tests, and supports innovative and cost-effective solutions to the world's most intractable development challenges. DIV holds a grant competition for innovative ideas, pilots and tests them using cutting-edge analytical methods, and scales solutions that demonstrate widespread impact and cost-effectiveness. If you have a great idea, please submit a Letter of Interest (LOI) to DIV using this form. **Citations should be provided whenever possible, and assumptions used to generate estimates should be clearly explained.** Please submit the final LOI to [DIVApplications@usaid.gov](mailto:DIVApplications@usaid.gov). Once you submit a LOI, it will undergo a competitive review and if successful, we will ask you to submit a full application.

For additional information about DIV, examples of great projects that we support, and our application process and timeline, please visit DIV's website at <http://www.usaid.gov/div/>. **Please carefully review our [Annual Program Statement](#) available on our website before submitting your LOI.**

Please use 11 point Calibri font. **DIV may not review any material beyond nine pages; the nine page limit includes the instruction text as well as the information provided by the applicant.**

**I. Eligibility Checklist**

DIV welcomes applications from many types of organizations including foundations, U.S. and non-U.S. non-governmental organizations (NGOs), faith-based organizations, U.S. and non-U.S. private businesses, business and trade associations, international organizations, U.S. and non-U.S. colleges and universities (public and private), civic groups, regional organizations, etc.

**DIV will only review applications from organizations that meet the following minimum requirements.** Check all that apply:

- Applicant is a legally recognized organizational entity under applicable law.
- Applicant's proposed activities take place in the countries for which USAID provides assistance. If the project covers activities in other countries, the DIV grant can only be used for activities in USAID presence countries.
- Applicant must be an organization from, or with an operational focus in, a country that is not ineligible for assistance under the Foreign Assistance Act of 1961, as amended, or related appropriations acts.

**II. Organization Information**

- A. Organization legal name: University of Dar es Salaam
- B. Organization type(please select from dropdown menu): University, Technical Institute or College  
If 'Other', please specify:
- C. Organization address:

Street Address            University Road  
City:                        Dar es Salaam  
State/Region:            Dar es salaam  
Zip/Postal Code:        Box 35091  
Country:                  Tanzania

- D. Contact information:

<u>Primary point of contact</u>		<u>Secondary point of contact</u>	
Name:	Prof. Nerey H. Mvungi	Name:	Dr. Takeshi Utsumi
Title:	Principal, College of ICT	Title:	CEO of GLOSAS/USA
Telephone:	+255 784 279663	Telephone:	1-718-939-0928
E-mail:	nhmvungi@udsm.ac.tz	E-mail:	takutsumi0@gmail.com

**III. Overview Information**

- A. Project title: Creating Global Knowledge Centers Network (GKCN) with Global University System (GUS) in Tanzania
- B. DIV stage(please select from dropdown menu). Please refer to the Annual Program Statement (APS) for definitions of each stage. The stage should be selected based on project activities, not funding needs:1
- C. Total funding requested (USD): 100000
- D. Proposed cost share (USD) (see the Annual Program Statement for definition):
- E. Which of the following best describes the sector your solution addresses? (please select from dropdown menu):Education and Training  
If 'Other', please specify:
- F. Secondary sector, if any (please select from dropdown menu):Other

If 'Other', please specify: Social, Water, Environment, Agriculture

- G. Partner organizations: See Section IV-E for entire list
- H. Primary country where the project will take place: Tanzania
- I. Secondary country/countries (if any) where the project will take place: Nile River basin countries
- J. Expected duration of project activities (months): 24
- K. Expected source of financial support at scale (long-term/widespread implementation):  
Hybrid of commercial and government/donor support
- L. Has the applicant ever received USAID funding in the past? No
- M. Has the applicant received USG funding for this or a similar project? No
- N. Has the applicant received DIV funding for this or a similar project? No  
If 'Yes', please provide the grant number:
- O. How did you initially hear about DIV? Other (please specify)  
If 'Other', please specify: CEO of GLOSAS/USA

#### IV. **Project Information**

DIV recommends that applicants provide about half a page of text for each section A – E (excluding the instructions). However, applicants may determine the length of each section as long as the full Letter of Interest (including instructions) does not exceed nine pages. **Please thoroughly review the [Annual Program Statement](#) before answering the following question.**

##### **A. Development Challenge, Your Innovation, and Anticipated Impacts**

**Challenge:** What development challenge are you addressing?

The main challenge is limited information on means to improve productivity, prices and market value chain and shortcomings on culture and institutions of rural communities.

1. Tanzania is primarily a small farmer agricultural economy engaging more than 35 million and accounting for about 50% of the GDP. The farmers' productivity and livelihood face multiple challenges (a) poor rainfall reliability due to environmental degradation and climate changes, (b) poorly managed agro-inputs, (c) heavily fluctuating prices, and (d) low knowledge and information on best practices, weather and market.

Addressing these challenges and increasing value of products will motivate farmers to increase production. Improved agro-inputs, availability of processing/semi-processing plants, and reliable electrical power supply are required to increase value of farm products.

2. Access to water for drinking, and irrigation is a major issue in the Lake Victoria basin countries, hence proper management of the water resource required because over 40 million people depend on it for their livelihoods. They have differing habits on water conservation, and environmental degradation and

protection. The Lake provides tap water for up to 150 villages of 1 million Kahama and Shinyanga inhabitants and the mining industry north west of Tanzania.

Significant number of young people (27 million) tend to migrate to towns because challenges have made the rural community productivity and living conditions poor.

3. The government made various interventions to address the challenges. However, impact of such interventions are not immediately visible. This proposal aims to complement governments' efforts to improve livelihood of the majority of Tanzanians in the rural communities which is necessary if the dream to move Tanzania from low to a middle income country is to be realized. Hence, a global simulation system node shall provide valuable information and learning resource for the complex social-economical system with international dimension.

Lake Victoria Environment Management Programme involving five EA countries to manage different aspects of the basin environment was another intervention addressing climate change, environmental pollution, resource management, climate resilient crops, and aquatic weed. Although social-economic activities and environment services are highly integrated, the interventions were not.

**Innovation:**What solution are you proposing?

Introducing GLOBAL KNOWLEDGE CENTERS NETWORK - TANZANIA (GKCN-TZ).

The social-economical-environmental-agricultural simulator will provide a viable platform for information and learning resource to young government officers (250,000), university students (over 200,000 in 30 institutions) and to farmers (7 million) when fully operational countrywide. The heavily nested simulator shall provide a closer to reality solution since it will use real data entered simultaneously locally and worldwide. It will also be a training tool for government officers and rural communities. To test the concept in Tanzania, two universities with 40,000 students and the Tanzanian side of the Lake basin (source of Nile River) with 11.8 million residents will be used.

The GKCN-TZ will be part of the GKCN (which is now being organized in global scale by our US partners, e.g. GLOSAS/USA, Stevens Institute of Technology, Millennium Institute, etc.).

This being a new concept to Tanzanians its introduction to key players is necessary. Therefore, training and planning workshop is a necessary first step in introducing GKCN-TZ. A successful GKCN-TZ will be a role model for countries in Lake Victoria Basin and to others in the Nile River Basin sharing water resources and environmental effects, e.g., Addis Ababa University in Ethiopia and Université Lumière de Bujumbura in Burundi – see below.

It is intended to have the system mirrored using lower capacity systems, the cloud concept and appropriate mobile devices interface to community centers, religious centers, health centers, etc. as part of scaling up. Such setup will enable much larger community to interact with the system. We intend to build on skills of our partners to ensure reliability in developed solutions to ensure sustainability.

It is envisaged that Knowledge Network Centers will help to reduce post-harvest losses and improve profitability by spreading quickly among peasants knowledge on the use of different innovative solutions for preserving and processing crops (e.g. foodstuff) like that of biogas for self-consumption and selling at appropriate time window to maximize returns.

The system is expected to provide products price trends in the regional markets and its strategy among farmers which they do not know. For example, a peasant producing casava in Tanzania should know demand of his product in Rwanda to be able to improve prices of their products in the market.

**Impact:**What impact do you expect your innovation to have on this development challenge? How will it significantly impact the development challenge in a way that has not been feasible before?

1. The introduction of Global Knowledge Centers Network – Tanzania as part of a global network shall deal with water, training, energy (renewable), agriculture and environment to facilitate early warning system.
2. The GKCNTZ will provide to over 250,000 young government officers and 200,000 university graduates information and learning resource to enable them make decisions based on scientific support systems. It will be dealing with different water basins starting with Lake Victoria Basin.
3. It will create an environment for local community leaders, religious centers and start up entrepreneurs to share experience and good practices from peers. It will facilitate sustainable development through proper management of environment, water, energy, supplies, and marketing systems.
4. The simulator will provide timely feedback to decision makers to enable them make early adjustment when unexpected problems occur from social, political or economic decision made earlier hence cultivating confidence in the 35 million rural community of their leaders and build cohesion.
5. The training facility will provide to 100,000 the necessary skills at different levels from management, entrepreneurship to simulation and negotiation skills.
6. Peasants will feel empowered by the knowledge and information acquired, acquire self-reliance drive, be more confident to conduct their business and less dependent on the government or other people.
7. The GKCNTZ will be part of a global collaboration network, sharing of local innovative ways of investment in areas of demand such as small scale energy generation, food production and preservation, preventive medicine, and peace building. In addition it will help in policy development, capacity building, decision making and promotion of startup entrepreneurs.

**Context and Previous Experiences:** Describe how your solution is relevant to the country or countries' context. Describe previous experiences implementing or testing the solution and any evidence of successful development impact. Answer required for Stage 2 and Stage 3 applicants. Our US partners, GLOSAS/USA <[www.friends-partners.org/GLOSAS/](http://www.friends-partners.org/GLOSAS/)>, Millennium Institute <[www.millennium-institute.org](http://www.millennium-institute.org)> and Stevens Institute of Technology <[www.stevens.edu](http://www.stevens.edu)>, etc., have extensive initiatives and experiences.

In Tanzanian context, poverty and ignorance have produced a mentality of dependance while fuelling some sense of helplessness among the poor. This trend will produce people who are perpetually dependent on government or outsiders for their basic survival. This may result in social upheavals or lay ground for future extremism and migrant mentality which may cause havock to other countries. This effort is meant to complement government efforts since it has been working to move the country from low a income to a medium income country. For this to happen the efforts must be inclusive of the 35 million forming the rural cummunity (80% of the population).

**Use of Funds:** How will you use DIV funding?

- (1) Organization of the planning workshop,
- (2) Seminar on system dynamics modeling,
- (3) Construction of Tazanian national socio-economic, renewable energy, environmental simulation models,
- (4) linkage of Tanzanian model with those of other countries,
- (5) Planning for global e-learning,
6. Planning for global and local ehealthcare, renewable energy (biogas) and telemedicine.

**Anticipated results:** What do you anticipate achieving with DIV funds?  
Capacity building of governmental officials and young aspiring leaders with simulator/trainer with real-time data, promotion of e-learning and telemedicine and global health.

## **B. Target Beneficiaries and Potential to Scale**

Provide the most appropriate estimate of who the solution will directly and indirectly affect.

Definition of direct beneficiary: governmental officers and graduate students who will learn about system dynamics and modeling, etc., in various level of governments in Union, municipal, local, etc

Definition of indirect beneficiary: peasants and house wives, ordinary citizens, etc who would be affected by the decisions made by those government officers with rational and scientific thinking for policy analysis and evaluation.

**Scaling:**What are possible avenues for scale up (e.g. public sector, international donors,private sector commercialization, or a combination) over the next 3 – 10 years, and what are your plans to get there?

We envisage that when a system is operational and performs well, it will be a role model for countries in the Lake Victoria Basin and the Nile Basin to amalgamate since it aims to address core pertinent issues of economical growth and sustainability, food security, energy, water, health care and environment. Furthermore, the system can be expanded to cover the remaining eight river basins and research and academic institutions in Tanzania.

By making the system to be accessible through mobile devices, considering that the mobile network is already extensive in Tanzania (over 20 million subscribers), large community can participate individually or as a community with minimal investment. Furthermore, the optical fibre backbone network provides another route for expansion of the service. Using low capacity system to mirror the centre in different communities, it is possible to extend to different levels of the community through religious centers and NGOs. It is also envisaged that private community will pick it up as a business opportunity.

How many people do you expect to reach, both in the country described above and globally?

Please explain how you calculated these estimates, including statistics and assumptions if relevant.

Since there have never been similar projects before anywhere, except for seminars on system dynamics conducted by the Millennium Institute in Dhaka, Bangladesh and Abuja, Nigeria and elsewhere, find below a preliminary estimate of the size of the target audience -- see Section IV-A-Impact above for the estimated numbers for the secondary beneficiaries:

	<u>Direct</u>	<u>Indirect</u>
Before DIV support		
In 1 year?	500	1000
In 3 years?	2000	4000
In 5 years?	4000	7500
In 10 years?	8000	30000

What are the characteristics of your target beneficiaries or customers (e.g. income groups or other demographics)?

Mid level decision makers and future decision makers.

### **C. Cost-Effectiveness and Competitive Landscape**

**Competitive Landscape:** What are existing common practices or competing solutions that seek to address the same development challenge as your solution in the area you intend to operate and scale?

Sustained development and prosperity is one of the biggest challenges and the government introduced a number of programmes including, Big results now, Kilimo kwanza, MUKUKUTA, MUKURABITA, etc. But the efforts may have not taken the global perspective although it has international financial support. Global simulation models of socio-economic-energy-environmental systems with Tanzanian dimension should provide a better planning tool. Hence our participation in the global model will add Tanzanian characteristics to it using local expertise.

**Advantages of the Innovation:** What makes your innovation more appealing than alternatives to beneficiaries and public and/or private sector stakeholders who could invest in scale-up?

This will be an experiment which will start small but aim at big results. Since this will be conducted without government intervention, it will enjoy flexibility of learning from its mistakes for some quick fixes wherever possible.

**Cost Effectiveness:** Please explain why your solution has the potential to yield greater impact per dollar than alternate ways of achieving the same development impacts. Provide estimates of impact per dollar for your solution and alternatives if possible.

The GKCNTZ being part of a global GKCNTZ dynamic simulation and training tool will promote long-term national development planning. It will allow users to identify the set of policies that lead towards a desired goal. This insight deepens understanding of critical development challenges. The solution will be extended as an academic experiment to test implementation of appropriate solutions for the less privileged groups of the society.

#### **D. Measuring Success**

Approaches to evaluation will vary by solution. Specific evaluation standards apply to each funding stage.

**Social Impact:** How will you measure progress towards social impacts? What is your comparison group, if any?

- Workshop conducted, number of participants and profile of attendees.
- Seminars conducted and knowledge transfer effected and profile and numbers accessed
- Assessment of % of Tanzania GKCNTZ model establishment.
- Assessment of GKCNTZ potential impact on young government leaders.
- Plans for being part of global e-learning
- Assessment of potential for e-health

**Cost Effectiveness:** How will you measure whether your solution has the potential to yield greater impact per dollar than alternative ways of achieving the same development impacts?

Comparison between the experimental and control group.

**Lessons Learned:** How will you generate relevant lessons throughout implementation? How will your evaluation inform your scaling strategy?

There will be periodic data collection pertaining knowledge gained, its application and change of attitude on the experimental group. Participants will be requested to provide their views of

the project on periodic basis. The information collected will be used to establish the way forward.

Please describe any plans to track your beneficiaries or customers' characteristics (as described in Section B, e.g. income group).

The main characteristic of our target group will be peasantry with their families and dependents.

## E. Project Team

**Lead Organization** Briefly describe the lead implementing organization, including relevant experience.

(1) The University of Dar es Salaam is among the top ten universities in Africa, (2) It is a multidisciplinary institution that teach and research in all disciplines except agriculture, health sciences and land studies. However, we run programs jointly with Health Sciences University. We are hosting international centers like climate change, water resources, renewable energy projects, appropriate technology, etc. (3) The last graduation ceremony among the graduates over 1,300 were postgraduate out of whom 41 were for PhDs. (4) We have center for environment, incubation and departments dealing with water resources and energy. (5) The ICT College has been working on ICT solutions for the government rolling out such solutions countrywide, (6) We have been working with Twente University of the Netherlands and the Ministry of Water on use of GIS to map water sources.

**Project Team** Describe the composition of the project team including key personnel, discussing the skills and experience they contribute to the proposed objectives.

(A) University of Dare es-Salaam (1) Prof. Nerey Mvungi - Project team leader; long experience in managing projects; has knowledge in a wide range of fields of engineering; good inter-personal relationship. (2) Prof. Jamidu Katima is expert in environmental management issues. (3) Prof Agnes Mwakaje is expert in agricultural / environmental economics (4) Dr. Richard Kimwaga (UDSM) is expert in water resources management (5) Dr. Honest Kimaro is an expert in systems design managing health information system being deployed countrywide (B) University of Dodoma (6) Prof. Justinian Anatory is a telecommunication engineering experts and systems modeling expert. He has been engaged in various research and development project and reviewer in various international recognized works such as IEEE. (7) Dr. Leonard Msele is systems design and cyber-security experts.

**Partners** Describe partner organizations (if any) and what skills and experience they contribute to implementing or scaling the project. Please distinguish between partners that have already agreed to participate and organizations (or types of organizations) that you will target.

- Baharicom Development Company <<http://tinyurl.com/3hrlp3>>,
- Center for International Conflict Resolution (CICR) of Columbia University <<http://tinyurl.com/67q444>>,
- Global Ring Network for Advanced Applications Development (GLORIAD) <<http://www.gloriad.org/>>,
- GLObal Systems Analysis and Simulation Association in the U.S.A. (GLOSAS/USA) <<http://www.friends-partners.org/GLOSAS/>>,
- Millennium Institute <<http://www.millennium-institute.org/>>,
- Stevens Institute of Technology <<http://www.stevens.edu/sit/>>,
- Mayo Clinic <[www.mayoclinic.org](http://www.mayoclinic.org)>,
- Sustainable World Initiative <[www.swinitiative.com](http://www.swinitiative.com)>,
- "Famine Early Warning System (FEWS)" of American Geosciences Institute < <http://www.agiweb.org>>, which is a project with USAID, NASA, USGS, UN, and some African Countries.



American Team has submitted a grant application to the Catalyzing New International Collaborations (CNIC) of the National Science Foundation.

In addition to the above, current institutions with faculty members who are participating in GEWS/GUS development projects are numerous; as including the University of Tampere in Finland, UK Open University, University of Tennessee in Knoxville, Montana State University, Houston Community College, University of Hawaii, University of Michigan, Maui Community College, and many others. GUS (UNESCO program) will serve as an educational broker for universities, thus helping them gain international influence and access to students that they would otherwise not reach.

- University of Dar es Salaam <<http://www.udsm.ac.tz>>

- University of Dodoma <<http://www.udom.ac.tz>>

- UNESCO-IHE Institute for Water Education, Delft, The Netherlands

(To be invited – this institute has already conducted water management project on Blue Nile River <<http://tinyurl.com/lvymjux>>. We will ask their participation in our GKCN/GEWS/GUS projects to apply the same to White Nile River.)

- Addis Ababa University in Ethiopia and Université Lumière de Bujumbura in Burundi will join in our project, as submitting their own Letter Of Inquiry (LOI) to the USAID/DIV.

- Hence, the works by Tanzanian and Ethiopian colleagues can nicely complement with the project of this Dutch institute, since they also plan to develop socio-economic-environment models, which our colleagues would develop for their GEWS projects.

**F. Citations** Please list citations for above five sections below (only content written in the LOI will be reviewed as part of the application; these citations will be used to verify factual accuracy if necessary).

1. Utsumi, T., P. Tapio Varis, and W. R. Klemm (2003), "Creating Global University System (GUS)," <<http://tinyurl.com/sfgm7>>

2. Utsumi, T. (2012), "The Global Early Warning System (GEWS) with The Global University System (GUS): Their Use Within ECOWAS countries," <<http://preview.tinyurl.com/bmo9ljj>>

3. Utsumi, T. (2013), "The Global Knowledge Center Network (GKCN) with The Global University System (GUS)," <<http://tinyurl.com/o5l22ll>>

4. MDG (2010), "Japan Education Cooperation Policy 2011 -2015, Education for Human Security -- Building Human Capacity, Nations and World Peace through Educational Development," Executive Summary <<http://tinyurl.com/28zukro>>

5. MDG (2010), "Japan Global Health Policy 2011 -2015. EMBRACE - Ensure Mothers and Babies Regular Access to Care," Executive Summary <<http://tinyurl.com/26mfuf7>>

6. Dr. Utsumi, Initiator of globalization of Internet – see two comments in <<http://tinyurl.com/3mucrf2>> and <<http://tinyurl.com/lyysx>>

7. Dr. Utsumi's effort of deregulating the Japanese telecom policies for the use of email with the help from the Late US Commerce Secretary, Mr. Malcolm Baldrige <<http://tinyurl.com/m74zr2k>> and <<http://tinyurl.com/ml9m2m2>> -- 3.8 billion email users nowadays,

8. Extension of GLORIAD to South Africa via ACE <<http://tinyurl.com/95n723k>> and <<http://tinyurl.com/awabmbd>>

9. Prof. Nerey Mvungi; Bio <<http://tinyurl.com/cso3mlh>>, CV: <<http://tinyurl.com/crxlk69>> 10. Academic publications-UDOM Staff-2012-2013 <<http://www.udom.ac.tz/index.php/component/phocadownload/category/9/>>

**V. Submission**

Please email your completed LOI in MS Word or compatible format to [DIVApplications@usaid.gov](mailto:DIVApplications@usaid.gov). Please do not send more than one LOI per project or any additional attachments or information. Once you've submitted your LOI, you will receive a confirmation that we have received it. Your LOI will undergo a competitive review and if successful, we will ask you to submit a full application. Please carefully review our [Annual Program Statement](#) available at <http://www.usaid.gov/div/> before submitting your LOI.

**By submitting this LOI, your organization is certifying that the answers to the questions are accurate to the full extent of your organization's knowledge.**

Prof. Nerey H. Mvungi  
\_\_\_\_\_

14/04/2014  
\_\_\_\_\_

Name of authorized representative

Date

For additional information about DIV, examples of great projects that we support, and our application process and timelines, please visit our website at <http://www.usaid.gov/div/>.