UNIVERSITY OF ZIMBABWE

RESEARCH PARTNERSHIPS HANDBOOK

Broad Based Research Partnerships for Broad Based Wealth Creation

Research and Intellectual Expo 2013
Research Partnerships for Wealth Creation.
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From the Vice Chancellor

Welcome to the University of Zimbabwe (UZ) 2013 Research and Intellectual Expo presentation. This year, the UZ has carefully selected over 90 Research Partnerships in line with the 2013 RIE main theme: **RESEARCH PARTNERSHIPS FOR WEALTH CREATION.** From the main theme, the UZ exhibits fall under the following subtheme: **Broad Based Research Partnerships for Broad Based Wealth Creation.** This subtheme represents the diversity of research partnerships within the University and other outside collaborative partners. The UZ subtheme interprets wealth creation beyond the monetary value to include among other things, creation of knowledge, understanding our heritage and cultural values, science and technology, innovation, human and material development in general. I hope you can enjoy interacting with our exhibitors and start new partnerships with the UZ.
Broad Based Research Partnerships for Broad Based Wealth Creation
TITLE OF PROJECT

21st Century ICT Driven University

RESEARCHERS
The Computer Centre’s ICT Units in the University
S. Mhlanga, H. Jowah, E. Sithole, A. C. Chikonzo

MAJOR PARTNERS
The University Community, External Research Collaborators

PROJECT DESCRIPTION
The role of the Computer Centre is to support the vision of the University of Zimbabwe to be an ICT driven 21st century University. Consistent with that vision, the Computer Centre provides a Campus Wide network with connectivity in 90% of the University buildings through a 6km fibre backbone. In addition, there is also a wireless cloud covering 60% of campus to support students and staff to access internet in and outside buildings. The Internet connection rose from 190Mbps in November 2012 to 228Mbps starting 26 August 2013. All these efforts ensure researchers and students have access to international journals and other e-research with ease. The fast internet enables researchers and students to collaborate with others across the global divide since the fast internet affords them online meetings, video conferencing and blogging among other services. Furthermore it allows the University to host a vast digital library accessible to staff and students. The Internet speed is supported by computer laboratories dotted around campus in department, faculties and the libraries. The network is robust enough to allow the University community to bring their own devices (BYOD) and give them access to the Internet and resources thereof.

The Centre also provides custom software solutions to the University community. Solutions like the laptops clearance and management solution, car park management solutions are some of the projects being developed. Our flagship solution is the e-mhare project, which will provide the University’s administrators and management a seamlessly integrated solution. The solution will increase efficiency and productivity by embracing the latest trends in the ICT in the provision of business solutions.

CONTRIBUTION TO WEALTH CREATION
By providing a robust and reliable network infrastructure, PCs and a variety of ICT services, the University community is empowered to engage in a variety of research projects whose output will lead to wealth creation.

TITLE OF PROJECT

Quality Assurance

RESEARCHERS/TEAM MEMBERS
Pro Vice Chancellor-Academic; Quality Assurance Officers: P. Musasa; C. Mdhuli

PROJECT DESCRIPTION.
The Quality Assurance Directorate’s role is to support departments and faculties to ensure that the products of the University are of a high standard. To this end, the Directorate periodically works with departments and faculties to review, strengthen, develop and monitor systems that contribute to the products of the University; among them, graduates, research, teaching and learning processes. Currently, the University has developed ten systems that guarantee its products and these include those for, Teaching and Learning, Research, Student Advisory, Industrial Attachment, Laboratories, ICT, Higher Degrees, Library and a Student Charter. To provide feedback to the users of these systems, the Directorate periodically carries out surveys and on-spot-observations to determine the levels of functioning and efficiency of these systems.

CONTRIBUTION WEALTH CREATION
The University of Zimbabwe partners receive products of high quality, consequently, their businesses will prosper once they engage University products, be they graduates, research or training.

TITLE OF PROJECT

Knowledge Management for Wealth Creation

RESEARCHERS/TEAM MEMBERS
The University of Zimbabwe Library in Partnership with INASP: Enhancing Wealth Creation through Facilitating Access to Scientific Research.
RESEARCH TEAM

MAJOR PARTNERS
International Network for the Availability of Scientific Publications (INASP)

BRIEF PROJECT DESCRIPTION
The exhibition seeks to showcase how the University of Zimbabwe Library partnership with INASP is contributing towards wealth creation. In this knowledge economy where the production, distribution and use of knowledge is the main driver of growth, wealth creation and employment, the University of Zimbabwe Library sought to fit into the knowledge society by among other things, building a digital library and facilitating access to the latest scholarly research information. The library partnered with INASP, an organization working to strengthen the availability, access and use of international research information by researchers in developing countries and the production, dissemination and access research outputs from researchers in those countries.

CONTRIBUTION WEALTH CREATION
In a knowledge driven economy, the UZ Library partnership with INASP is contributing to wealth creation for Zimbabwe by providing the infrastructure for knowledge dissemination. Furthermore, access to information that Zimbabwean research community has enables them to be innovative in their various disciplines which will feed into industry and the economy at large.

TITLE OF PROJECT
Software development

PROJECT DESCRIPTION
The Computer Science development has embarked on four software development projects; the School management, Web-based Integrated Hotel Management System, Mobile E-Tourism Android Application for Zimbabwe Tourist Destinations and Online Exhibition Management. The major aim of these projects is to support local institutions to efficiently manage their business through e-solutions. The department is inviting partners to field-test and develop a Research and Development partnership. Some of these projects will have significant impact on local schools and companies that have no capacity to purchase expensive software from the international market.

RESEARCH /TEAM MEMBERS
K. Parshotam, B. M. Nyambo,

The School Management System has five major modules: Admin Module, Bursary Module, Registrar Module, Teacher Module and the Parent Module. The main aim of this management software is among other things to speed up the administrative procedures of student registration, staff, results, fees, attendance and short message management.

CONTRIBUTION TO WEALTH CREATION
Efficient administration of a school saves a lot of money for institutions with limited resources.

TITLE OF PROJECT
Mobile E-Tourism Android Application for Zimbabwe Tourist Destinations

PROJECT DESCRIPTION
Mobile E-Tourism Application helps tourists and the general citizenry with information on tourist attractions, hotels and/or lodges, banks and other important facilities close to where they are visiting. The system has an interface which is installed on an Android phone and it connects to the information on a server through the internet.

CONTRIBUTION TO WEALTH CREATION
Improved tourist satisfaction attracts more business in the country and to the individual company.
TITLE OF PROJECT
Web-based Integrated Hotel Management System

RESEARCH TEAM MEMBERS
D. Mazvimba, B. M Nyambo

PROJECT DESCRIPTION
An integrated system, comprising of reservations, payroll, accounting, and HR, modules that allows customers to perform checking in and out, calculation of fares according to the number of people, type of room, number of days and other services received during the stay in the hotel. The system also manages housekeeping of rooms according to the status of the room which can be “Clean”, “Not Clean”, “Occupied” and “Under Maintenance”. The system is web based so it allows management access their records securely over the internet.

CONTRIBUTION TO WEALTH CREATION
Small scale hotel systems that cannot afford international large software packages can run efficiently on this system and that creates more business for them.

TITLE OF PROJECT
Online Exhibition Management

RESEARCH TEAM MEMBERS
S. Goreraza, O. Kufandirimbwa

PROJECT DESCRIPTION
The online exhibition management system was designed to enable Exhibition Authorities to register and exhibitors and buyers online. Exhibitors simply register and pay for their exhibition space online using online payment methods like PayPal and credit cards. One of the critical objectives of the system is to allow exhibitors to log on and do a virtual tour on the available space on 360 degree view using panorama pictures technology. This will enable the Exhibition Authorities to attract potential exhibitors on the event by creating a first impression using an online virtual tour on the system.

CONTRIBUTION TO WEALTH CREATION
An efficient system attracts more business.

TITLE OF PROJECT
Focus on the Languages of Business

RESEARCHERS/TEAM MEMBERS
Academic Registry

PROJECT DESCRIPTION
The University has excelled in promoting local minority languages as well as foreign languages necessary for business transactions. In the Faculty of Arts, students have an opportunity to enroll for courses in any one of the following languages: Tonga, Kiswahili, Chinese, French, Portuguese and Germany notwithstanding the traditional courses in Shona and Ndebele. Promotion of local languages is consistent with the Constitution of Zimbabwe to recognize all languages as important. Regional (Kiswahili) and foreign/international languages (Chinese, Korean, French, Germany, Portuguese) facilitates wealth creation because Zimbabwe has traded links with countries where these languages are spoken. Some of these languages are not only offered to degree students, but corporates and individuals who need to learn the languages to engage in trade and commerce. Furthermore, UZ graduates who take up these courses can compete for employment opportunities in the region and abroad especially where language can be a barrier.

TITLE OF PROJECT
A Journey through the Past.

RESEARCHERS/TEAM MEMBERS
R. Kapumha, P. Nyabezi, P. Katsamudanga, G. Pwiti
MAJOR PARTNERS

**Partner: National Museums and Monuments of Zimbabwe (NMMZ)**

**Nature of partnership:** NMMZ is the solely mandated custodian of all Zimbabwean archaeological heritage and has museums that house archaeological/cultural material. They provided and continue to, some of the artefacts that the Unit uses for exhibitions and displays. The Archaeological Unit is also engaged by NMMZ, and vice versa in research projects, excavations, Archaeological Impact Assessments (which can result in mitigation or rescue archaeology). Students in the Unit also volunteer during vacations to work in the museums.

**PROJECT DESCRIPTION**

Archaeological and cultural places are a major component of tourist attractions the world over, contributing significantly in tourism earnings. Zimbabwe is well endowed with thousands of archaeological sites that have the potential of being major tourist attractions. Unfortunately, the tourism sector has not effectively exploited the archaeological heritage to broaden the range of tourist attractions. In addition, the tourism sector has limited knowledge of the archaeology of the country and where they do, they find it difficult to present and interpret these resources. Therefore, the archaeology of Zimbabwe is currently undersold. The Archaeology Unit is involved in a number of archaeological heritage projects in the country which can provide scientific information and support to the tourism sector on how to effectively interpret and exploit cultural heritage resources. Hence, the Unit will avail research information that would assist in this sustainable utilization of archaeological resources for tourism purposes.

**CONTRIBUTION TO WEALTH CREATION**

This project appreciates the vastness and uniqueness of Zimbabwe’s archaeological heritage. It seeks to expose it to the general public and the tourism sector, with anticipation that they will invest their time and finances to visit and explore Zimbabwe’s rich cultural heritage, thereby contributing immensely to the country’s GDP through cultural tourism.

**TITLE OF PROJECT**

*Realizing the Full Potential of Languages as Resources for Socio-Economic Development: African Languages And Literature.*

**TEAM MEMBERS**

E. N. Mberi; E. Chabata; E. Ndlovu; T.L. Gopo; Z. Mamvura

**MAJOR PARTNERS**

1. OSISA (Intellectual Resource mobilization and research funders for Tonga project)
2. University of Zambia (Department of African Languages and Literature-Research Material and staff resource mobilization for Kiswahili Project)
3. University of Dar es Salam (Research Material and staff resource mobilization for Kiswahili Project)
4. Ministry of Justice, Parliament of Zimbabwe, ZBC, NGOs among many others (Translation and Interpretation Programme)
5. University of Oslo
6. Eduardo Mondlane, Cross-Border Languages Project (CROBOL)

**PROJECT DESCRIPTION**

The project intends to market the languages and courses offered in line with the ultimate vision of developing the linguistic landscape in Zimbabwe and improving the lives of the speakers thereof. In any country the diversity of languages brings with it broad bases of potential for wealth and development – or problems if not managed well. It is the role of intellectuals to identify and build on the inherent potential and, indeed, transform problematic situations into positive socio-economic springboards. Languages remain untapped and underutilized goldfields in most multilingual nations – where increased globalization significantly continues to render the need for inter-linguistic communication ever so important. Commerce and industries benefit immensely from multi-lingual communication; not to mention the justice system where it is every citizen’s right to express themselves in a language they understand the most. In light of this, it is apparent that the need for language practitioners, particularly in the translation and interpreting areas, is continually on the rise – and the more languages a practitioner is conversant in, the better.

**CONTRIBUTION TO WEALTH CREATION**

Developing the Translation (and language) industry in the country will boost not only the judicial services but also in industry (e.g. tourism, film) public services, education sector and, of course, the entire economy both directly and indirectly. The emphasis is on richness in diversity as the key to development (wealth creation) in a multicultural environment where language is at the center of each of the cultures.
STRENGTHENING RESEARCH MANAGEMENT AND SUPPORT IN THE COLLEGE OF HEALTH SCIENCES

E. Gomo, M.M Chidzonga, J. Hakim, T. Mashaah, A. Matsika, G. Mapisaunga, and M. Mukova

UNIVERSITY OF MALAWI, COLLEGE OF MEDICINE, UNIVERSITY OF ZAMBIA, SCHOOL OF MEDICINE, UNIVERSITY OF CAPE TOWN, STELLENBOSCH UNIVERSITY, BOTSWANA HARVARD PARTNERSHIP, UNIVERSITY OF LIVERPOOL, UNIVERSITY OF BARTS AND LONDON AND STANFORD UNIVERSITY, WELLCOME TRUST (UK).

THE GOAL OF THE PROJECT IS TO STRENGTHEN RESEARCH MANAGEMENT AND SUPPORT IN THE COLLEGE OF HEALTH SCIENCES THROUGH ESTABLISHING A RESEARCH SUPPORT CENTRE THAT PROVIDES COMPREHENSIVE PRE- AND POST-AWARD SERVICES TO RESEARCHERS AND STUDENTS.

STRENGTHENING RESEARCH GOVERNANCE THROUGH DEVELOPMENT AND IMPLEMENTATION OF RESEARCH POLICIES AND PROCEDURES AIMED AT ENSURING A CONDUCIVE RESEARCH ENVIRONMENT AND CULTURE IN THE COLLEGE;

ENHANCING RESEARCH SKILLS OF FACULTY AND STUDENTS AND FACILITATING THE TRANSLATION OF KNOWLEDGE FOR HEALTH AND ULTIMATELY ECONOMIC DEVELOPMENT.

CONTRIBUTION TO WEALTH CREATION

NATIONAL ECONOMIC DEVELOPMENT IS INEXORABLY LINKED TO A HEALTHY NATION AND WORKFORCE. OUR PROJECT SEeks TO STRENGTHEN THE CAPACITY OF THE UZ-CHS TO CONDUCT HIGH QUALITY AND NATIONALLY RELEVANT RESEARCH THAT PROVIDES THE MUCH NEEDED EVIDENCE FOR THE IMPROVEMENT OF THE HEALTH OF ZIMBABWEANS. THE PROJECT AIMS TO CONTRIBUTE TO WEALTH CREATION BY INCREASING THE RESEARCH OUTPUT, QUALITY AND UTILIZATION OF RESEARCH FINDINGS. THIS WILL BE ACHIEVED THROUGH STIMULATING RESEARCH INTEREST AT ALL LEVELS OF ACADEMIA IN THE COLLEGE, INCREASING THE NUMBER OF QUALIFIED AND INTERNATIONALLY RECOGNIZED RESEARCHERS, AND STRENGTHENING LINKAGES BETWEEN RESEARCHERS, POLICY MAKERS AND HEALTH PRACTITIONERS.

THE MOLECULAR BIOLOGY TEACHING LABORATORY

I. Sithole-Niang, S. Mukanganyama, F. Chidzwondo, H. Zharo and I. Munhenzva

THE KIRKHOUSE TRUST

THE MAIN OBJECTIVE OF THE PROJECT IS TO INCREASE THE CAPACITY OF UNIVERSITY OF ZIMBABWE STUDENTS AND STAFF IN THE APPLICATION OF BASIC MOLECULAR BIOLOGY METHODS APPLICABLE TO MANY SCIENTIFIC DISCIPLINES. FUNDING IS PROVIDED BY THE KIRKHOUSE TRUST WHO PROVIDES SUPPORT FOR A MOLECULAR BIOLOGY TEACHING LABORATORY WITH SPECIFIC FOCUS ON THE PRODUCTION AND UTILIZATION OF THE ENZYME T AQ DNA POLYMERASE. THE TRAINING IS BASED ON THREE WORKSHOPS ANNUALLY TO INTERESTED INDIVIDUALS CAMPUSS-WIDE.

PROJECT CONTRIBUTION TO WEALTH CREATION

THE INTRODUCTION OF THE TEACHING KIT WILL INCREASE THE CAPACITY OF THE UNIVERSITY OF ZIMBABWE STUDENTS AND STAFF IN THE APPLICATION OF BASIC MOLECULAR BIOLOGY METHODS APPLICABLE TO MANY SCIENTIFIC DISCIPLINES. THE T AQ DNA POLYMERASE ENZYME THAT HAS BEEN PROVIDED WILL BE USED IN “HANDS ON” TRAINING AROUND THE THEORY AND PRACTICAL TECHNIQUES THAT USE THE POLYMERASE CHAIN REACTION (PCR). THIS KIT WILL ALLOW TRAINING IN DNA EXTRACTION, GEL ELECTROPHORESIS, PROTEIN EXPRESSION AND PURIFICATION AND CONSEQUENTLY THE WIDE RANGING APPLICATION OF MOLECULAR TOOLS, RESULTING IN INCREASED ADOPTION, PUBLICATIONS, THEIR IMPROVED QUALITY AND INCREASED INTAKE OF BIOTECHNOLOGY STUDENTS INTO THE UZ.

HIV /HPV DIVERSITY, CO-INFECTIONS AND PATHOGENESIS THRUST.

Duri K, Mhandire K, E Gomo, B. Stray-Pedersen, Muller, H. Matarira, J. Chipinduro, N. Chin’ombe, Dandara

BROAD BASED RESEARCH PARTNERSHIPS FOR BROAD BASED WEALTH CREATION
MAJOR PARTNERS
1. University of Zimbabwe College of Health Sciences
2. Letten Foundation Research Foundation
3. University of Oslo, Norway: Prof B. Stray Pedersen, Prof F. Muller
4. National Institute of Health Research
5. University of Cape Town, South Africa: Prof C. Dandara

PROJECT DESCRIPTION
This is a continued medical research thrust that is aimed at addressing public health concerns involving viral infections mainly HIV/AIDS and Human Papilloma Viruses (HPV) including their co-morbidities, host genetics & pharmacokinetics in Zimbabwe and the region at large. The project provides a capacity building platform in molecular biology where postgraduate students (MSc, MPhil and DPhil) are trained through carrying out various HIV/AIDS, HPV and HBV related researches. Emphasis is placed on team building and publication of research results through medical research journals, conferences and other media channels.

CONTRIBUTION TO WEALTH CREATION
Research outputs contribute to a repository of knowledge in the field of health sciences through theses, publications and posters. This information is vital in further research, health monitoring and policy making in the country and beyond. Using findings from our previous research, the thrust is currently focusing on development of “in-house” molecular assays for diagnosis and monitoring of HIV/HPV/HBV in Zimbabwe. These kits will be specific to the HIV strains that are prevalent in Zimbabwe and will provide a cheaper alternative that may quench the local market’s needs while benefiting the ordinary Zimbabwean patient. Careful and thorough evaluation of molecular techniques of HPV DNA detection and typing will be used in determining the source of the infection, forensic medicine thus assisting in identifying children who are at risk of being sexually abused, a practice currently rampant in our society.

TITLE OF PROJECT

RESEARCHERS/TEAM MEMBERS

MAJOR PARTNERS
Confucius Institute at the University of Zimbabwe (CIUZ) -Bilingual Dictionary Construction.

PROJECT DESCRIPTION
This project is the first in its own kind that seeks to promote Chinese language learning in Zimbabwe through the construction of the first Shona-Chinese, Chinese-Shona Bilingual handbook. The aim is to come up with a simplified handbook to help Chinese second language learners of Shona and Shona second language learners of Chinese. It will provide short and simple definitions for most commonly used words in the two languages, as well as how they are used in discourse.

CONTRIBUTION TO WEALTH CREATION
Language is central to development. Karl Max said that ‘a foreign language is a weapon in the struggle of life.’ The Zimbabwe-Sino relations have scaled to unprecedented heights and with such cooperation come the need for unbridled communication. The Chinese language is now more than important in Zimbabwe, a country whose major economic partner is China. The volumes of people who travel between these two countries will benefit by using this manual since it will make their communication in both languages easier. A foreign language is also important in fostering bilateral relations between business partner countries. When communication is made easier and bilateral relations are strengthened there is more latitude for wealth creation. The UZ students taking Chinese as a subject for their programs and anyone doing Chinese as a short course, will benefit immensely.

TITLE OF PROJECT
Breaking Language Barriers through Research and Innovation.

RESEARCHERS/TEAM MEMBERS
N. Ernesto, T. Bwetenga, M. Chipara, R.E. Ahrens, K. Dhoro, T. Gwanzura, J. Maririmba, D. Chipfupa,
**MAJOR PARTNERS**

DAAD (=German Academic Exchange Service), HQ, Bonn, Alliance Francaise Harare - French Embassy in Zimbabwe (Language and Cultural Exchange Centre) Germany represented by R.E. Ahrens (UZ).

**PROJECT DESCRIPTION**

The project will showcase the role of foreign languages in wealth creation. It will also showcase the Department of Modern Languages’ linkages with various institutions, institutes, organisations and embassies for wealth creation for the University of Zimbabwe and on the national level.

**CONTRIBUTION TO WEALTH CREATION**

The Department of Modern Languages has been involved in income generation through offering translation services for various embassies, NGOs such as Practical Action, companies such as Nyika Engineering and individuals requiring translation services.

**TITLE OF PROJECT**

*Geographic Information Science (GIS) and Earth Observation (EO) for Wealth Creation: Exploration, Management and Utilisation of Resources.*

**RESEARCHERS/TEAM MEMBERS**


**MAJOR PARTNERS**

University of Zimbabwe Biological Sciences Department, CIRAD, France

**PROJECT DESCRIPTION**

In this display, we show cutting edge research results in the applications and development of methods in GIS and EO that have an impact on the economy within the land management, wildlife and agriculture management.

**CONTRIBUTION TO WEALTH CREATION**

Agriculture and Natural Resources is the mainstay of Zimbabwe’s economy. Thus, cutting edge research in GIS and EO is needed for understanding key methods that can be used for proper exploration, management and utilisation of resources.

**TITLE OF PROJECT**

*Geographic Information Science (GIS) and Earth Observation (EO) for Wealth Creation: Agriculture and Natural Resources Information Management and Training*

**RESEARCHERS/TEAM MEMBERS**


**MAJOR PARTNERS**

Kutsaga Tobacco Research, Ministry of Lands and Rural Resettlement, Scientific Industrial Research Development Centre (SIRDC), CIRAD France, University of Zimbabwe Biological Sciences Department, Computer Science Department, Environmental Management Agency

**PROJECT DESCRIPTION**

In this display, we show different GIS and EO projects that have been undertaken within areas that are vital for wealth creation including Tobacco Area Estimation, Land Information System Database Development, Wildlife and Livestock Research, Mineral Modelling, Fire and Drought Monitoring in Zimbabwe and the SADC region.

**CONTRIBUTION TO WEALTH CREATION**

Agriculture and Natural Resources is the mainstay of Zimbabwe’s economy. Thus, accurate quantification of agricultural production and threats to it, as well as close estimations of abundance of mineral and environmental resources is critical to their exploitation for wealth creation.
TITLE OF PROJECT

Showcasing the Progress in the Development of Marondera College, UZ.

RESEARCH MEMBERS

C. Mutisi, UZ Marondera College

PROJECT DESCRIPTION

Showcasing the progress in the development of Marondera College, UZ, to bring awareness to the public and also attract potential students.

CONTRIBUTION TO WEALTH CREATION

Training and capacity building in Agricultural Technology.

TITLE OF PROJECT

Diverse Manpower Recruitment and Development for the University of Zimbabwe 21st Century Needs.

RESEARCHERS/ TEAM MEMBERS

Human Resources Department.
T. Magwaza, S. Nyamunokora, R. Gusha, J. Nyamadzi

PROJECT DESCRIPTION

The Human Resources (HR) department’s aim is to ensure that the University has quality manpower in both its academic and non-academic ranks that is consistent with its vision of being “To be (and be recognized by others) as a leading University working for prosperity, peace and dignity in Zimbabwe and beyond.” Consistent with that vision, the role of the HR department is to ensure that there is diversity in its recruitment, training and education for its staff; it mounts an aggressive staff development programme to change the complexion of the academic staff by 2017; encourage staff to get tenure and achieve promotions at the highest level. The exhibit will show that the current staff is composed of lecturers of various nationalities; members of staff have been trained in various universities and institutions, regions, disciplines and countries; current staff development programmes support youth injection in academic staff ranks and are studying new disciplines; non- higher degreed members are encouraged to improve their qualifications; and finally, that members of staff are supported to climb the promotions ladder.

CONTRIBUTION TO WEALTH CREATION

Diversity in training backgrounds enables transfer of diverse skills knowledge and attitudes to students leading diverse service in the economic and social environment.
Broad Based Research Partnerships for Broad Based Wealth Creation
MANAGEMENT OF NATURAL RESOURCES
**Title of Project**

*Development of a Sustainable Drought: Early Warning and Forecasting System, for the Limpopo River Basin in Zimbabwe.*

**Researchers**

B. Chisadza, M. J. Tumbare, I. Nhapi, W. R. Nyabeze

**Major Partners**

1. DEWFORA - Sponsors
2. WRNA - Implementing partner
3. MSD - Provision of meteorological data
4. Mzingwane communities (mainly crop and livestock) farmers.
5. AGRITEX - Linkages with farmers and agricultural drought data provision.
6. ZINWA - Hydrological drought data provision.

**Project Description**

The project aimed to identify, document and analyze local traditional knowledge (LTK) indicators used in drought forecasting in the Mzingwane Catchment in Zimbabwe, and to assess the possibility of integrating traditional rainfall forecasting with the local traditional indicators to improve applicability of meteorological drought forecasts at local level. This information can help communities in Mzingwane catchment who are mainly farmers to manage their crops and livestock to minimize risks during droughts and maximize opportunities during favourable conditions.

**Contribution to Wealth Creation**

The project main target is to provide accurate, reliable local drought forecast to farmers. Furthermore, it will assist farmers and stakeholders like Ministry of Agriculture in planning, decision making and wise allocation of agricultural resources for maximum production and minimization of losses thus promoting wealth creation. The project results in development of a sustainable drought early warning and forecasting system which is a precursor for drought mitigation and adaptation and hence protection and promotion of wealth. The project also aims at promoting locally based rainfall forecasting methods, which will benefit less privileged communities with less or no access to meteorological forecasts.

**Title of Project**

*Towards Sustainable Utilization of Fallows (Shona Makura, Ndebele Ifusi) in Zimbabwean Communal Lands.*

**Researchers/Team Members**

E. Manzungu, S. Ncube, L. Mtali

**Major Partners**

University of Zimbabwe, Zimbabwe
Department of Agricultural, Technical and Extension Services, Ministry of Agriculture, Mechanisation and Irrigation Development, Zimbabwe
Non-Governmental Organisations operating in communal lands
Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)

**Project Description**

While land reform, that was/is meant to settle thousands of farming households on agricultural land, has rightfully dominated the agrarian debate in Zimbabwe, the management of land in communal lands has escaped the attention it deserves. Attempts to utilize fallow land, based on techniques to increase cropping productivity, have largely failed. Use of fallow land for grazing, which is the default use of fallows, has not resulted in increased livestock productivity because of the poor quality of grazing. The semi-arid conditions in many communal areas of Zimbabwe as well as the poor fertility of the soil means that without intervention, fallow lands will not revert to their natural productive state. There is need to assess the current status of fallow land in terms of its spatial and temporal distribution, current utilization and prospects for sustainable use.

The study aims to evaluate the occurrence of fallow land since 1930, assess the resultant ecological conditions and explore alternative sustainable utilization options across different biophysical and socio-economic contexts in Zimbabwe.

**Contribution to Wealth Creation**

Overall the project contributes to MDG1 (ensuring food security) and MDG 7 (ensuring environmental sustainability), which in this project are shown to be inextricably linked.
GIS Based Waste Water Alternative Management for Upper Manyame Catchment.

T. Gumindoga, H. Parichi, A. Mhizha, and T. Rwasoka

Harare Municipality, Upper Manyame Sub Catchment Council (UMSCC), Geography Dept. UZ

Waste water management in Upper Manyame Catchment is problematic and has resulted in the pollution of Lake Chivero and Lake Manyame that also happen to be sources of water for Harare. This problem is also catalyzed by aged sewer networks and underperforming treatment plants. It is thus imperative that a new paradigm to the treatment and disposal of Harare’s wastewater be formulated and evaluated. This work presents an assessment and evaluation of a cheaper option to waste water management that aims to minimize pollution of the Lake Chivero and Manyame. The alternative involves disposal of treated sewage downstream of Manyame and Chivero lakes thus keeping these reservoirs less polluted. This solution will require the development of a canal that takes the sewage from the current treatment plants and deposit it in constructed pastures and wetlands downstream of the Chivero and Manyame dams. This is advantageous in two ways: it maintains healthy reservoirs for Harare metropolitan and in addition promotes farming activities that enhance economic livelihoods where the wastewater is also diverted to pastures.

The use of traditional route surveying methods are often costly, time consuming, arduous and cumbersome and will not be apt unlike the adoption of the compatible GIS and RS applications which will abridge quantifying and canal route identification problems. This will mean reduced water treatment costs for the city authorities which will in turn reduce water bills for the consumer. The agriculture supported by this innovation reduces the importation of food by the government thus the money could be then channeled towards other developmental projects in the country for more wealth creation.

Raising Environmental Agency in the Local Community.

O. Namasasu, R. Moyana, B.Ed. Geography students

This project was carried out by B.Ed Geography students as part of on-going efforts to infuse strong Environmental Agency into the curriculum of the Faculty of Education. Students designed and implemented practical projects aimed at raising Environmental Agency in their local communities and submitted their work in the form of portfolios showing the titles, aims, objectives, participants, activities, achievements and challenges, together with photographic evidence of the nature and progress of their projects. They also presented their work at a seminar on Environmental Agency organized by the Faculty of Education on the 30th of April 2013. The exhibits are based on presentations made at this seminar and highlight the themes that students identified, the aims and objectives that they set for themselves, the activities that their communities of practice engaged in, and their achievements and challenges.

The targeted beneficiaries are poor rural and urban communities. They are expected to benefit from wealth created through sustainable development arising from projects such as tree planting, organic farming and protected wells.

Harnessing Biochar to enhance soil fertility, crop productivity and environmental quality in Zimbabwe.

W. Gwenzi, F. Mapanda, F. Mukome, N. Chaukura

University of California, Davies (USA); Harare Institute of Technology, International Foundations for Science (IFS), Sweden
PROJECT DESCRIPTION

Biochar, a product of carbonization of biomass enhances soil quality and crop productivity while reducing greenhouse gas emissions and sequestering carbon. These attributes of Biochar are important for tropical soils prevalent in Zimbabwe, which are characterized by low fertility, low soil carbon, poor moisture retention. Until now, no studies have investigated the impact of Biochar application on soil properties, crop productivity and environmental quality in Zimbabwe. In this pioneering research, the project will conduct laboratory plant bio assay and field experiments on Biochar-amended sandy and clay soils of Zimbabwe. The objectives are; (1) to investigate the retention, mobility and plant uptake of nutrients and heavy metals on Biochar-amended soils. (2) to quantify carbon sequestration, soil hydraulic properties and greenhouse gas emissions on Biochar-amended soils, (3) to investigate maize productivity on Biochar-amended soils and (4) to develop its novel adsorbents for remediation of contaminated media. The insights gained from this study will be valuable to small holder farmers and grassroots development agencies.

CONTRIBUTION TO WEALTH CREATION

The research seeks to explore the development of novel products (biochar, bio-oil, synthetic gas) from waste organic material (biomass) posing environmental and public health risk. These products have multiple potential applications in agriculture, environmental engineering, mitigation of greenhouse gas emissions and as energy sources.

TITLE OF PROJECT

*Environmental Rebirth (3 Bin Concept And Bill Novation) for Wealth Creation.*

RESEARCHERS/TEAM MEMBERS

ENACTUS University of Zimbabwe Entrepreneurship Club

MAJOR PARTNERS


PROJECT DESCRIPTION

The Environmental Rebirth project is a waste management project whose main thrust is recycling waste paper in Mbare and Karoi. In Mbare, the project involves recycling of Low Density Polyethene (LDPE) packaging materials. The Karoi Billovation project focuses on recycling of used billboard materials to manufacture chairs.

PROJECT CONTRIBUTION TO WEALTH CREATION

The Mbare project has created a source of income for some families in Mbare National area, who are now able to earn a living through collection and selling of plastics. The Karoi project cuts on cost of production of chairs since participants use used billboard materials which are available at no cost, boosting profit margins for participants.

TITLE OF PROJECT

*Construction of Wind Resource Atlas for Zimbabwe*

RESEARCHERS/TEAM MEMBERS

T. Hove, L. Madiye

MAJOR PARTNERS

Ministry of Energy and Power Development

PROJECT DESCRIPTION

A Wind Resource Atlas was produced using hourly measured wind speed data. The vital statistics generated are the map-presented values of the parameters of the Weibull probability distribution function for modelling wind speed frequency distribution and the wind power density map for Zimbabwe.

CONTRIBUTION TO WEALTH CREATION

The data for wind resource spatial distribution over the country will provide useful information for design, energy performance evaluation and economic analysis of wind energy delivery systems. Potential users of our data are design engineers, energy planners and investors in wind energy-based systems. The Department of Energy and Power Development will also need the data for incorporation in the national renewable energy database and for inclusion in the International Renewable Energy (IRENA) global solar and wind atlas.
SCIENCE AND TECHNOLOGY
**TITLE OF PROJECT**  
*GSM Based Prepaid Energy Meter with Appliance Control.*

**RESEARCHERS**  
E. Rashayi, E. Chikuni, G. Gope, D. Govere, M. Manhivi

**MAJOR PARTNERS**  
ZESA (potential), Polytechnic of Namibia, Cape Peninsula University of Technology

**PROJECT DESCRIPTION**  
The recent advances in the field of information technology have made the exchange of information fast, accurate and more secure. The digital revolution caused the rapid growth of digital devices such as computers and telecommunication devices. Communication networks such as the internet, GSM networks, are available in most parts of the country and the services offered are becoming more affordable.

The engineering challenge in this project is to develop a prepaid meter with a GSM communication interface. This meter will allow communication between the customer and the meter via GSM. The developed meter will have an interface to control appliances in a residential setup. The customer can talk to his/her meter, ask for information e.g. balance of kWh used, remaining, appliances switched on etc. The customer can decide to switch off some loads while on the road, airport or outside the country.

**CONTRIBUTION TO WEALTH CREATION**  
It is well known that use of ICTs increase the GDP of a country. If consumers are provided with energy saving tools, they can channel their income to other deserving areas thereby improving their total wellbeing and comfort.

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**TITLE OF PROJECT**  
*Development of Starch Extraction Systems for Cassava*

**RESEARCH TEAM MEMBERS**  
R. M. Nazare, D. Vhovha, T. Rukuni

**PROJECT DESCRIPTION**  
Cassava production as a household food security crop in Zimbabwe, particularly in Manicaland, has been increasing with support from the Government, and bilateral/multilateral institutions. Production has now surpassed household food security requirements and farmers are searching for options to add value to the surplus so as to improve family incomes. The food and paper processing industry in Zimbabwe is importing in excess of 1600 tonnes of starch annually. The project seeks to develop medium scale processing systems for converting Cassava tubers into starch. The product can then be sold to the food and paper industry, locally, regionally and even internationally.

**CONTRIBUTION TO WEALTH CREATION**  
Potential benefits include:
- Improved farmer incomes from value addition to the cassava crop
- Local level employment generation from the processing plant
- Reduced foreign currency outflows when local industry buys starch locally
- Potential for improved foreign currency inflows from export of locally produced starch.

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**TITLE OF PROJECT**  
*Development of a Rapid Detection Method for Seed Borne Pathogens in Common Bean Seed.*

**RESEARCHERS/TEAM MEMBERS**  
E. Ngadze, F. Chidzwondo, I. Sithole-Niang

**MAJOR PARTNERS**  
Crop Breeding Institute (Government Department)

**PROJECT DESCRIPTION**  
Presumptive isolates were identified using morphological, biochemical and molecular based methods. The isolates were identified as Pseudomonas and Xanthomonas spp. based on the results of morphological and biochemical assays. These
Two techniques failed to differentiate between the different species which affect beans. Consequently there was a need to characterize the bacteria using molecular techniques. Polymerase chain reaction was used in the identification of the presumptive isolates. The technique positively identified the bacteria as Xanthomonas campestris and Pseudomonas syringae.

**CONTRIBUTION TO WEALTH CREATION**

The method will be useful to seed producers and seed houses that will need to certify their seed before marketing. The department of Crop Science has a plant clinic which runs a disease diagnostic service to farmers. This new technique will be used in the plant clinic and the department will have to advertise the service to growers and seed houses. This will significantly contribute to income generation in the department.

**TITLE OF PROJECT**

*Selection of An Optimum Type of Load Haul Dumpers to Improve Productivity and Lower Operating Costs in The Up-Dip Section of Mimosa Mine.*

**RESEARCHERS/TEAM MEMBERS**

L. Madziwa, M.T. Mamina

**MAJOR PARTNERS**

Mimosa Mine and University of Zimbabwe

**PROJECT DESCRIPTION**

This project is an evaluation of the load haul dumpers at Mimosa Mining Company in order to select an optimum type that will lower cost and improve production in the up-dip section. A desktop study was initially carried out and two types of machines (AARDMAJOR LF 5.5 and GHHSLP5) were acquired for practical evaluation against the current fleet of LHDs (GHH LF 4.4). This project incorporated the major rules of thumb in equipment selection to select one feasible alternative for use in the up-dip section and these included power evaluation, operating and life cycle cost analysis, productivity, overall equipment effectiveness and reliability analysis. A selection was made based on a machine having shown the best overall performance in all the evaluation parameters used. The AARD LHD proved to be the best performer and will allow Mimosa to reduce the number of machines used per section to two since the productivity of two of the AARD LHDs exceeded that of three GHH LHDs from the evaluation.

**CONTRIBUTION TO WEALTH CREATION**

Implementation of the conclusions and recommendations from the project will lead to reduction of operating costs at Mimosa Mining Company by 30% and thus an increase in its profits. This will significantly increase the government revenue in taxes on the company’s revenue and royalties. Furthermore, the government is now a stakeholder in Mimosa Mining Company through the indigenization program therefore, it will directly benefit from an increase in profits. The community and employees will also benefit directly through the Community Share Ownership Trust and Workers Trust respectively. Lastly if Mimosa increases its revenue through lowering costs, it then undertakes corporate social responsibility programs more readily in funding projects and academic institutions.

**TITLE OF PROJECT**

*Phorbol Ester Detoxification Mechanisms in Jatropha Curcas Seed Cake.*

**RESEARCHERS/TEAM MEMBERS**

A. Wakandigara, L.R.M. Nhamo & J. Kugara

**PROJECT DESCRIPTION**

Jatropha curcas seed has greater than 30% oil that can be processed to produce biodiesel and soap. Unfortunately, the remaining protein-rich seed cake cannot be used as stock feed because it contains toxic Phorbol esters. Studies have shown that, some bacteria and fungi can detoxify the cake by solid-state fermentation. This project seeks to find out detoxification mechanisms of Jatropha curcas seed cake by various microorganisms and reagents, with the aim of suggesting chemicals that can remove the Phorbol esters, faster and more efficiently.

**PROJECT CONTRIBUTION TO WEALTH CREATION**

Since the world is working towards economically friendly and renewable fuel sources, there is a potential for Jatropha curcas to be a major source of biodiesel. As large volumes of biodiesel are generated, so will be the seed cake, which could support livestock production. Nutritional value of Jatropha seed cake equals that of soya bean, and better than that of sunflower and cotton seed, making it an ideal stock feed, if detoxified. The success of this project will certainly be viewed as
a breakthrough by the animal industry, considering that the drought-resistant Jatropha can grow on marginal land, is not consumed by humans and does not compete with soya bean. Society groups such as Mutoko and Gokwe districts, where Jatropha is currently found, can grow the plant, crush the seed, sell the oil and make protein concentrates for chicken and pig production.

**TITLE OF PROJECT**

*Online Monitoring of Lightning Incidence and Severity in Rural Zimbabwe.*

**RESEARCH TEAM MEMBERS**

E. Rashayi, D. Adiel, B. Kabasa, C. Kanyepi, P. Shumba

**PARTNERS**

IEEE (USA), Econet (Potential partners, ZESA and Govt)

**PROJECT DESCRIPTION**

This project looks at online monitoring system for the incidence and severity of lightning and sends the acquired data to an on line central server using a GSM network. The system consists of a lightning detector, microcontroller, a GSM interface and a central server with my SQL database. The lightning detector uses a lightning sensor which detects lightning at 500 kHz and estimates the distance, within 40 km radius, from the lightning storm. The microcontroller provides all the intelligent functions required. The GSM interface of the developed unit which is called an Intelligent Electronic Device (IED), allows the device to send lightning activity data to a central server. The IED can provide early warning system to people within the vicinity of the installed device through an alarm system. Initial laboratory tests were carried out and the device managed to successfully send SMS messages to a central server.

**CONTRIBUTION TO WEALTH CREATION**

The aim of this project is that, if this system is implemented in Zimbabwe, it will provide mobile companies, power utilities with lightning activity profiles which they can use in the design of appropriate lightning protection schemes of their substations and base stations scattered around the country. This can result in increased revenue due to reduced incidences of equipment damage. In rural areas, loss of lives may be avoided by implementing early warning systems.

**TITLE OF PROJECT**

*Improving Recovery of Slow Floating Platinum Group Metals (Pgm)s in the Zimplats SMC Floatation Plant (Chemical Factors).*

**RESEARCHERS/TEAM MEMBERS**

F. I. Matorofa, I. Tichivangana

**MAJOR PARTNERS**

Zimbabwe Platinum Mines (ZIMPLATS)

**PROJECT DESCRIPTION**

The Great Dyke in Zimbabwe hosts the Platinum Group Metals ore and has the world’s second largest reserves. Zimbabwe Platinum Mines is in the business of mining and extracting Platinum Group Metals through three mines in the Ngezi area and two concentrator plants at Ngezi and Selous (Selous Metallurgical Complex). A smelter and converter are also located at Selous. Selous Metallurgical Complex employs the flotation process to concentrate the ore after mining. Due to the particle size and mineral associations of the Platinum Group Metals, some of the Platinum Group Metals become slow floating and are not captured during the flotation process. Analysis of the tailings samples showed that approximately 52.7 volume percent of the PGMs lost to the tailings are slow floating in nature. Laboratory hot pulp rate tests were done using plant samples and varying collector SIBX addition to establish if recovery could be improved. Tests on the Cleaner feed showed improvement in recovery from 38.94% at 10g/t SIBX addition as compared to 17.04% recovery for no addition of collector SIBX for the Cleaner feed test-work point. The grade decreased by a small factor from 37g/t to 29 g/t as compared to the factor increase in recovery. An increase in the recovery of the slow floating PGMs in the Rougher Scavenger Mid-point test-works samples from 93.17% to 94.38% and from 92.09% to 92.14% was also obtained. A corresponding decrease in grade was however realized from 10.81g/t to 10.45g/t and from 11.93g/t to 11.11g/t.

**PROJECT CONTRIBUTION WEALTH CREATION**

The quantity of 4Es lost to the tailings can be reduced from an average grade of 0.595g/t to an approximate grade of 0.2814g/t if the slow floating PGMs are captured. The increase in the recovery of the PGMS will result in an increase in
revenue to approximately 58 million dollars/annum (calculated as at June 2013). The revenue increase will benefit first the company due to the increase in efficiency and productivity of the plant. The country will also benefit due availability of stable tax returns and growth of the economy. The community also stands to benefit as it is now part of the shareholders through the Community Share Ownership Trust which has been set up. Ability to further develop this project will also be of value to the rest of the Platinum producers.

**PROJECT TITLE**

*Low Profile Wind Turbine Power Generator for Rural and Urban Use.*

**RESEARCH TEAM**

E. Mabunda, G. Kapungu, C. Mutepfe

**PARTNERS**

Mechanical Workshop Artisans

**PROJECT DESCRIPTION**

The project is aimed at harnessing the wind to drive a permanent motor generator that would produce electrical power to charge deep cycle batteries. The power from the batteries will in turn power an inverter to drive lights and any other light loads. The challenge is to make the system use small vertical blades and at the same time to make it turn under Zimbabwe’s low wind speeds.

**CONTRIBUTION WEALTH CREATION**

If successful, the project would improve the well-being of the general populace, in particular those who dwell in remote areas, through energy provision for domestic and small scale farming.

**TITLE OF PROJECT**

*Solar Disinfection (SODIS) Gadget for Drinking Water at Small Household Point-of-Use*

**RESEARCHERS/TEAM MEMBERS**

T. Mduluza, N. Midzi, S. Mtapuri-Zinyowera, M. Kubara & P. Nziramasanga

**MAJOR PARTNERS**


ii) Water, Diseases Control & Public Health – for good health of the general population;

iii) Ministry of Lands & Water – Access to water by the general populations.

iv) Ministry of Science & Technology – Design of SODIS Water gadget for general use at small household.

**PROJECT DESCRIPTION**

There has been decline and slow progress in developing water & sanitation projects in rural and resettled areas. Furthermore, the availability of clean and safe drinking water has been on the decline. We have also witnessed an upsurge of water borne infections in Zimbabwean communities. This indicates a rising challenge and a very poor access to safe and clean drinking water. The SODIS gadget is simple and usable in all communities where solar UV is used to kill any contaminating microbes. The water normally is considered safe and collected from running rivers, open wells and unsafe sources. Exposure to solar UV readily available in Zimbabwean communities would be ideal. The gadget when ready is affordable with multi use as portable water collecting containers while providing disinfected water.

**CONTRIBUTION TO WEALTH CREATION**

The designed gadget will play a pivotal role of providing access to safe drinking water at point-of-use disinfection in small household. The SODIS gadget is simple and not expensive, making use of solar UV rays to disinfect any pathogens common in contaminating water. The generality of communities in rural and resettled areas have access to open water bodies, seemingly clean water to the eye but, likely contaminated with micro-organisms that cause diarrhoeal infections. Compounded with poor sanitation, the sources of drinking water are likely to be contaminated. While most water used in the household may be safe including that used for cooking, drinking water require killing of any contaminating agents. SODIS is a very simple way of disinfecting drinking water at point-of-use.

**TITLE OF PROJECT**

*Visual Effects and Multimedia Training.*
RESEARCHERS/ TEAM MEMBERS
K. S. Sambo, D. Meki and J. Chapwanya

MAJOR PARTNERS
Global Academy (co – exhibitors for visual effects)

PROJECT DESCRIPTION
The Visual Effects and Animation Project seek to demonstrate how character development is done on screen animation. Essentially, it showcases how multimedia can improve the production and quality of visual products in Zimbabwean film, music and video production.

CONTRIBUTION TO WEALTH CREATION
The project intends to stimulate the waning visual arts industry. It is hoped that the improvement of the visual effects industry will make the industry more vibrant and marketable hence increasing prospects for growth and employment creation.

TITLE OF PROJECT
Prominent Ears: Anthropometric Study of the Ear of Black Primary School Children in Harare.

RESEARCHERS/ TEAM MEMBERS
W. Muteweye, G.I. Muguti

PROJECT DESCRIPTION
Prominent ear is the most common congenital ear deformity affecting 65% of children in the Western world and has psycho-social effects on the bearer. It is important to know the prevalence in the local population as well as to know the parameters of ear morphology locally. These parameters can be useful in the diagnosis and evaluation of ear anomalies. The study provides a set of biometric data of auricular dimensions for normal black children. This data is useful for ear reconstruction.

CONTRIBUTION TO WEALTH CREATION
The study provides a set of important biometric data which can be used for diagnosis of ear anomalies and for more efficient and cost effective reconstructive procedures of the ear.

TITLE OF PROJECT
Cleft Lip and Palate in Zimbabwe.

RESEARCHERS /TEAM MEMBERS
M.M Chidzonga/UZ-CHS Department of Dentistry

MAJOR PARTNERS
UZ-CHS Oral Health Centre

NATURE OF PARTNERSHIP
Clinicians in the UZ Oral Health Centre Documenting Cleft Lip and Palate Presentation at the Clinic UZ-CHS Oral Health Centre (Sponsor)

BRIEF PROJECT DESCRIPTION
Documenting presentation of cleft lip and palate in the clinic, treatment outcomes and epidemiology. Investigation of possible etiologic factors and prevention.

CONTRIBUTION TO WEALTH CREATION
Prevention, awareness early diagnosis and management of cleft lip and palate. Patients will benefit and could be more productive in wealth creation.
TITLE OF PROJECT
Determinants and Pattern of Utilisation of Allogenic Blood in Elective General Surgical Operations.

RESEARCHERS/TEAM MEMBERS
G. I. Muguti, U.N. Kadumbo

PROJECT DESCRIPTION
Auditing of blood utilisation in any hospital helps in improving blood ordering systems which can reduce hospital costs and risks of allogenic blood exposure to patients. The study shows that overall, there was appropriate utilisation of blood among patients scheduled for major elective operations. However, there was over cross matching for some major operations.

CONTRIBUTION TO WEALTH CREATION
Adopting the maximum surgical blood ordering schedule will ensure more efficient and cost-effective utilisation of allogenic blood in our hospitals. Clinicians should adopt the maximum surgical blood ordering schedule.
Broad Based Research Partnerships for Broad Based Wealth Creation
**Title of Project**

*Traditional Style – Rough Offal Sausage.*

**Researchers/Team Members**
L. K. Nyanga, C. Nyaruwanga, W. Maredza, S. Mukorera, E. Mushandu and M. Ndemera

**Project Description**

Rough offal sausage is a new product developed from beef offal. The sausage is made up of tripe, stomach tissue and intestines. To improve the texture, binding agent such as cassava flour is added. The sausage also contains natural herbs and spices such as garlic, thyme, clove and barbeque which act as antioxidants and antimicrobials, thus have a preservative effect on the sausage.

**Contribution to Wealth Creation**

It is value addition to beef offal which are usually sold cheaper. Some people do not buy offal because of the long cooking time and the smell. The rough offal sausage has a very short cooking time and smell but still maintain the offal taste. People will buy it at a higher price than the raw offal but will be cheaper as compared to other sausages which are offered on market. Rough offal are the most concentrated source of just every nutrient, including important vitamins, minerals, healthy fats and essential amino acids. In addition, the herbs added have benefits; they act as antioxidants and immune enhancers.

**Title of Project**

*Value Addition to Pumpkins.*

**Research Team Members**
L. K. Nyanga, E. R. Mushandu, Part 3 Food Science Students

**Project Description**

Pumpkin flour is made purely from pumpkins. This product allows people to enjoy pumpkins in and out of season. It has anti diabetic properties and contains antioxidants. The flour is also rich in vitamin A, C and E, and minerals zinc and potassium.

**Project Contribution Wealth Creation**

This product is currently not on the market but is likely to be welcomed in our society as people can use it in the same way they use pumpkins. Companies may also use it to fortify their baked products because of its high nutrient content.

**Title of Project**

*Wild Cereal Grains: A Potential Alternative to Hunger Alleviation in Zimbabwe.*

**Researchers/Team Members**
K. Chitindingu, M. Muchuweti and M. N. Benhura

**Major Partners**
University of Zimbabwe,

**Project Description**

The project is an assessment of the macro and micro nutritional composition of selected wild cereal grains that are consumed in times of severe droughts mainly by the rural folk. The wild cereal grains include: *Amaranthus hybridus* [pigweed (Eng); Mowa guru (Sh) products - corpora- reference works e.g. dictionaries, glossaries.], *Brachiaria brizantha* [Upright brachiaria (Eng); Zinyaruzoka (Sh)], *Eleusine indica* [Rapoko grass (Eng); Gwezere, Mombe (Sh)], *Panicum maximum* [Guinee grass (Eng); chitseretsere, chivavane (Sh); uhatshi (Nd); nsekenene (T)], *Rottboellia cochinchinensis* [Guinea-fowl grass, Shamva grass (Eng); mulungwa (T)] and *Sorghum arundinaceum* [common wild sorghum (Eng)] (Shava, 2003). In Africa where the daily diet is dominated by starchy staple foods, cereals are one of the cheapest and most readily available sources of important proteins, vitamins, minerals and essential amino acid (Akubugwo 2007). However due to erratic rainfall patterns, the traditional domesticated cereal grains like maize have been difficult to farm. There was urgent need for research on drought resistant alternatives; hence our research on the above mentioned grains.

**Contribution to Wealth Creation**

The research provides an opportunity of untapped knowledge utilisation by indigenous people and the government. There is growing interest in natural foods and our research provides scientific support to the alternative healthy food sources that can provide income to the farming community. The project intends to venture into product development that is commercially viable.
INDIGENOUS KNOWLEDGE SYSTEMS
Drug Discovery, Food and Heritage
Drug Discovery
TITLE OF PROJECT

The Effects of Boophone Disticha Hydroethanolic Extract on Early Maternal Separation followed by Later Stressors in Anxiety-Rat/Mouse Models.

RESEARCHERS/TEAM MEMBERS


MAJOR PARTNERS

D. Tagwireyi (UZ Pharmacy Dept.); H.M Chinyanga and J. Chifamba (UZ Physiology Dept.); P. Nkomozepi (Witwatersrand University); D. Pfukenyi (Faculty of Veterinary Studies).

PROJECT DESCRIPTION

Cardiovascular comorbid disorders are common findings in psychiatric settings and are often underdiagnosed and increase mortality. A study to explore how anxiety induced by postnatal maternal separation stress can be treated by Boophone Disticha extract and that Boophone Disticha have long lasting antihypertensive and anxiolytic activity better than diazepam. Overall, Boophone Disticha reduced blood pressure (BP) and increased heart rate (HR) in maternally separated mice as well as improving estimates of BP and HR variabilities which are indicators used to diagnose anxiety disorders clinically.

CONTRIBUTION TO WEALTH CREATION

These results shown by B. Disticha are new and this have spurred the study to do even more as we work towards drug development and commercialization of the product that will come from the results of this work. Boophone Disticha may have additional beneficial effects on the cardiovascular and autonomic nervous systems other than anxiolytic effects which may be missing in conventional medicines currently used. Hence forth Boophone study may see new drugs which are cheaper and more beneficial being discovered. These are useful in treatment of cardiovascular comorbid disorders which tends to increase mortality in psychiatric patients as well as disability in animals common in veterinary practice and agricultural livestock production.

TITLE OF PROJECT

Survey of Ethno-Veterinary Control of Bovine Dermatophilosis and Ticks by Smallholder Farmers.

RESEARCHERS/TEAM MEMBERS

D.N Ndhlovu, I. Mujakwi and P.J Masika

MAJOR PARTNERS

Communal Farmers, Agricultural Research and Development Institute, University of Fort Hare and University of Zimbabwe.

PROJECT DESCRIPTION

Field and laboratory based study of medicinal plants used by small-holder farmers in the management of Bovine Dermatophilosis and ticks. In the process of the study, medicinal plants for other animal diseases are investigated. It is envisioned that, after identification of the plants, a certain number of these plants that are frequently used by farmers will be investigated further to determine efficacy, phytochemical composition and also the bioactive elements in the medicinal plants. Later an illustrated booklet will be produced outlining how the plants are used.

CONTRIBUTION TO WEALTH CREATION

After identifying and validating the efficacy of the medicinal plants, the bioactive compounds will be identified, purified and farmer friendly delivery methods for the medicinal plants developed. Farmers will benefit through the safe and efficient use of medicinal plants in managing animal diseases, in the process their livelihood/wealth will be enhanced. Capturing this indigenous knowledge system will also increase the intellectual wealth of the country through documentation of traditional animal disease control practices. There is a possibility of patenting the bioactive compounds identified in the plants by the University of Zimbabwe which in itself can be a source of income.

TITLE OF PROJECT

Phytochemical Analysis and Toxicity of Acaricidal Plants Used for Tick Control in Zimbabwe.

RESEARCH TEAM MEMBERS

E.T. Nyahangare, B. Mvumi ; S Mukanganyama ; D Tagwireyi.
PARTNERS
ADAPPT Network

BRIEF PROJECT DESCRIPTION
The project was focused on characterizing the active ingredients of acaricidal plants used for tick control in Zimbabwe. The second objective was to determine toxicity of the plants against target and non-target organisms. Characterization has still not been done because of lack of proper equipment. HPLC / MC was done but toxicity experiments have shown that, the plant materials are potentially dangerous to non-target organisms if not used carefully. In other toxicity experiments, the plant extracts of Lippia javanica, Strychnos spinosum and Maerua edulis showed that they both have contact and repellence toxicity properties.

PROJECT CONTRIBUTION WEALTH CREATION
This project broadly seeks to look at alternatively cheaper sources of tick control remedies that small holder farmers can use and avoid losing their livestock to tick borne diseases. Livestock plays a critical role in wealth dynamics in Africa.

TITLE OF PROJECT
Scientific Evaluation and Validation of Efficacy for Medicinal Plants from Zimbabwe

RESEARCH TEAM
B. Moyo, S. Sithole, T. Chimponda, E. Chirisa, T. Chitemerere, R. Mangoyi and S. Mukanganyama

MAJOR PARTNERS
Prof. Jacob Midiwo, Department of Chemistry, University of Nairobi, Kenya, Prof. Helana Danielson, Prof. Bengt Mannervik, BMC, Uppsala University, Sweden. Dr. Banashi Hazra, Jadavpur University, Calcutta, India. Prof. Lesaline Mampuru, University of Limpopo, SA. Dr. Andrea Kerstin Marobela, University of Botswana, Botswana. The International Foundation for Science (IFS Stockholm, Sweden), the International Science Programs (Uppsala, Sweden). The Academy of Sciences for the Developing World (TWAS Trieste, Italy), Research Board (University of Zimbabwe).

DESCRIPTION OF THE PROJECT
Zimbabwe is a rich source of plants that are used to treat many ailments but is also a high burdened country with regards to HIV/AIDS infections and has the second highest mortality TB rate in the world. This project is designed to provide a scientific basis to the plants already used for traditional purposes as well as probe for new anti-infective constituents so as to make new medicines. The main thrust of the research is to investigate the interaction of cellular biomolecules with a variety of chemical species that include drugs, novel plant medicinal compounds, carcinogens and environmental pollutants. The current thrust has been to do with natural products from plant in Zimbabwe. This type of research is of relevance to the Zimbabwean scene where most people use herbal and medicinal plants but there are not documented cases of efficacy or toxicity. The Ames Mutagenicity Test which uses Salmonella species can be done as in vitro investigation. Also we have plans to use the Zebra fish for these studies.

CONTRIBUTION TO WEALTH CREATION
If land owners, are given a viable economic reason not to destroy the forests, these precious sources of wealth could and would be saved. Similarly if plants with medicinal properties are identified and harvested sustainably, there would be much more economical value in them, than their use as for curing tobacco or if they are just burnt for cattle and farming operations. Sustainable harvesting of these types of resources would provide value as well more long term income and profits year after year for generations to come.

TITLE OF PROJECT
Concurrent Use of Herbal Medicine With Antiretroviral Therapy (ART) Among People Living With HIV And AIDS in Masvingo.

RESEARCHERS
A. Ndaimani and R. Nyamakura

BRIEF PROJECT DESCRIPTION
There is an increase in the number of people living with HIV and AIDS (PLWHA) who are using herbal medicine concurrently with ART in Masvingo. There is evidence that, 98.2% of PLWHA who are on Antiretroviral Therapy (ART) use herbal medicines as well (Mudzviti et al, 2012). While PLWHA concurrently use herbal medicine with ART to counteract the side effects of ART, herbal medicines may be desired to improve the quality of life. ART alone may not holistically address the health needs of PLWHA. However, in the process of concurrent use of herbal medicine with ART, PLWHA are at risk of failing to adhere to ART.
CONTRIBUTION TO WEALTH CREATION

The concurrent use of the ART and herbal medicine make it possible for PLWHA to live longer and healthier lives participating actively in the economic activities of the country.

TITLE OF PROJECT

From Poison to Medicine: The Boophane Project.

RESEARCHERS/TEAM MEMBERS

D. Tagwireyi; L. Gadaga; W. Pote; C. Katuruza

MAJOR PARTNERS

Sable Health Care, International Foundation for Science; University of Zimbabwe Research Board

PROJECT DESCRIPTION

This project seeks to develop a suitably formulated herbal pharmaceutical preparation from a known toxic plant with potential for use as adjunctive therapy in various neuropsychiatric illnesses.

CONTRIBUTION TO WEALTH CREATION

Successful production of this herbal medicine will not only provide a blue print on which to model other herbal medicine products but, will also produce a significant financial benefit as these products are marketed and sold locally and internationally.
Health Food Systems
**Baobab Flavoured Yoghurt.**

**RESEARCH TEAM MEMBERS**
M. Muchuweti, B. Chipupura, M. Bhebhe

**PROJECT DESCRIPTION**

The project promotes indigenous foods by means of scientific characterization and product development. Baobab, a local indigenous fruit was selected because of the pulp’s rich mineral and vitamin C content. After macro and micronutrient determination, the fruit was subjected to product formulation and sensory evaluation. The evaluation showed that, the product would be competitive enough for the supermarket shelves. Several formulations have been carried out in an effort to optimize a yoghurt, ice cream and smoothies from baobab. To date the yoghurt has been optimised. The yoghurt is currently being produced at laboratory scale. Under these conditions, we are able to produce about 30 litres of yoghurt (approximately 200 x 150 ml cups) per day.

**CONTRIBUTION TO WEALTH CREATION**

We intend to launch the product at the University of Zimbabwe and expand to other markets when pilot scale equipment is secured.

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**Indigenous and Exotic Fruit Pigments: More than Food Colourants.**

**RESEARCH TEAM**
M. Muchuweti, A. Kasiyamhuru, N. Chikuni, L.R.M.Nhamo, M. Benhura

**PROJECT DESCRIPTION**

Anthocyanins are natural plant phenolics mainly found in flowers, fruits and vegetables, and are responsible for their bright red, orange and blue colours. Anthocyanins have been regarded as potential food colourants used to replace synthetic colourants.

Most synthetic colourants have been found to have potential health risks. Recently increased attention has been given to the possible health benefits of natural colourants in preventing chronic and degradative diseases such as heart disease and cancer. These effects were attributed to their antioxidant capacity. Our preliminary studies on Syzgium cumini (hute) pigments have showed that, the pigments were stable especially at refrigeration temperatures (4–8ºc) and had high antioxidant capacity.

**CONTRIBUTION TO WEALTH CREATION**

We intend to extract, characterise and apply these natural pigments from both indigenous and exotic fruits, in food products.

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**Profiling Indigenous Herbal Teas.**

**RESEARCH TEAM MEMBERS**
M. Muchuweti, M. Bhebhe, D. Tagwireyi

**PARTNERS**
University of Zimbabwe: Tulimara

**PROJECT DESCRIPTION**

The project is aimed at profiling the phytochemical characteristics of four indigenous herbal teas namely Lippia javanica (zumbani), Fadogia angustifolia (Makoni), Myrothamnus flabellifolius (Mufandichimuka) and Ficus sycamore leaves (Muwonde). These herbs have been used in Zimbabwe as teas since time immemorial, either as medicine or simply nutraceuticals. However, the missing link has been the scientific proof of the existence of individual components responsible for the claimed health benefits. As Zimbabwean scientists, we have taken it upon ourselves to bridge that gap. We have established that, these herbal teas are sources of non-nutrient phytochemicals, the phenolic compounds which serve as antioxidants and their activity is comparable to the popular herbal plant Aspalathus linearis (Rooibos).

We are now at a stage of profiling the individual compounds in each herb, ascertaining bioavailability of the nutraceuticals and possibilities of cytotoxicity.
CONTRIBUTION TO WEALTH CREATION

Once herbal products are scientifically characterised extensively, their registration with regulatory authorities as nutraceuticals and marketing them for public consumption will be easier. Currently Tulumara™, a local company selling herbal products, has shown interest in the project.

TITLE OF PROJECT

*Nutrients and Anti Nutrients Composition of Vitex Payos And Ziziphus Mauritiana Wild Fruits From Zimbabwe.*

RESEARCHERS/TEAM MEMBERS

L. K. Nyanga and C. Chidewe

MAJOR PARTNERS

Royal Netherlands Academy of Arts and Sciences and International Foundation for Science sponsored the project.

PROJECT DESCRIPTION

Vitex Payos and Ziziphus Mauritiana fruits are consumed by many people in Zimbabwe both in urban and rural areas. Indigenous fruits are essential for food security, health and nutrition, and economic welfare of communities. Wild fruits are a rich source of nutrients such as minerals, vitamins and carbohydrates. However, some of the fruits contain anti-nutritional factors that can affect the availability of nutrients required by the body. These anti-nutritional factors interfere with metabolic processes so that growth and bioavailability of nutrients are negatively influenced. This study determined the nutrients and anti-nutrients of Vitex Payos and Ziziphus Mauritiana wild fruits from Zimbabwe.

CONTRIBUTION TO WEALTH CREATION

The project looked at the nutrient composition of Ziziphus Mauritiana fruits in order to know what consumers benefits from eating the fruits and the anti-nutritional factors that are present in Vitex Payos and Ziziphus Mauritiana which might interfere with metabolic processes which might have a negative impact on human health. Negative impact on human health will have an economic burden on the Zimbabwean community. Zimbabwean community will have information on whether it safe to consume these fruits and in what quantities. These fruits can be used to develop food products through value addition of Zimbabwean wild fruits.

TITLE OF PROJECT

*Natural Products Research Network in Eastern & Central Africa (NAPRECA) – Zimbabwe.*

RESEARCHERS/TEAM MEMBERS

M. Bhebhe, C. Chidewe, A. Wakandigara, D. Tagwireyi, and S. Mukanganyama

MAJOR PARTNERS

Faculty of Science, College of Health Sciences and Natural Products Research Network in Eastern & Central Africa (NAPRECA)

DESCRIPTION OF THE PROJECT

NAPRECA-ZIM [http://naprecazim.uz.ac.zw/] is a representative of the Natural Products Research Network in Eastern & Central Africa in Zimbabwe. The organization is constitutionally managed in the Department of Biochemistry at the University of Zimbabwe. Members of the executive are from the faculties of Science, Agriculture and the College of Health Sciences. The mandate of NAPRECA is mobilization of scientists from various disciplines and to contribute effectively in the development of science and natural products and to promote the development of natural products research and utilization.

CONTRIBUTION TO WEALTH CREATION

Promotion of dissemination of knowledge on natural product research in Zimbabwe since a knowledgeable society can convert information to application.
Research and Intellectual Expo 2013

Broad Based Research Partnerships for Broad Based Wealth Creation
Research and Intellectual Expo 2013

Broad Based Research Partnerships for Broad Based Wealth Creation

Heritage Systems
**TITLE OF PROJECT**

*Integrating Indigenous Knowledge Systems into Climate Change Adaptation Strategies.*

**RESEARCH TEAM/MEMBERS**

J. Gwenzi, M. Malongoya, E. Mashonjowa

**MAJOR PARTNERS**

AGRITEX (Extension Workers) and Communal farmers in Guruve

**PROJECT DESCRIPTION**

Documenting Indigenous Knowledge Systems (IKS or Traditional Science) used for rainfall prediction. Collected IKS observed are compared with formal science based forecasts. Observations also check on signal strength and verification is done at the end of each rainfall season.

**CONTRIBUTION TO WEALTH CREATION**

Improved subsistence food security enables marketing the surplus resulting in improved household income and ability to purchase assets.

**TITLE OF PROJECT**

*Local Communities Participation in Archaeological Research and Cultural Heritage Management*

**RESEARCH TEAM**

G. Pwiti, P. Shenjere-Nyabezi, A. Nhamo, R. Kapumha

**PARTNERS**

Dr Shadrek Chirikure (University of Cape Town)

Dr Tore Saetersdal (Telemark University College, Norway)

Mr Farai Chabata (National Museums and Monuments of Zimbabwe)

**PROJECT DESCRIPTION**

Over the past few decades, archaeological research and heritage management have gradually been moving away from being based on purely professional considerations towards adoption of a more holistic outlook which places such endeavors within a given socio-cultural context where the local communities represent an integral part of the processes. This is premised on the philosophy that archaeological places first and foremost belong to the communities where they are located and in many cases, such communities relate directly to the places and research and management must entail direct benefits to them, material and otherwise. Against this background, the project has been exploring ways in local communities can be integrated into the research and management processes with the view to developing selected archaeological sites as local cultural community centres and cultural tourism destinations.

**CONTRIBUTION TO WEALTH CREATION**

Cultural and economic development through the successful use of archaeological sites as local community centres and cultural tourism destinations.

**TITLE OF PROJECT**

*Cultural Encounters: Creativity and Capital.*

**RESEARCHERS/TEAM MEMBERS**

S. Ravengai

**MAJOR PARTNERS**

N. Muwonwa and D. Mhako

**PROJECT DESCRIPTION**

This project seeks to interrogate and document the cultural consequences of the contact between various Zimbabwean cultures in the context of television, film and theatre. The major encounter was between Western and African cultural forms from 1890 to 1980. Although colonialism ended in 1980, western cultural forms continued playing a part in cultural choices made by Africans. Apart from this major encounter, another one was between Africans of different ethnicities characterized by the dominance of the Shona (84%), the Ndebele (15%) and other minorities such as Nambya, Kalanga, Tonga, Venda, Shangani, Shangwe, Xhosa/Mfengu, Sotho etc. constituting 1% of the total population.
CONTRIBUTION TO WEALTH CREATION

My findings so far reveal a performative syncretism with indigenous cultural texts either keyed into western dramaturgical frames or indigenous cultural texts forming the performance matrix into which other cultural forms are anchored. The project will use these key findings to create a blockbuster or soap opera that celebrates Zimbabwean cultural diversity, which invariably inculcates a Zimbabwean national identity. The blockbuster (capable of sustaining widespread popularity and enormous sales) can be marketed regionally and internationally. This will promote the visibility of the University of Zimbabwe and Zimbabwe at large. This is one of the ways Zimbabwe can counter the harmful effects of globalization which has the propensity to erode local identities.

TITLE OF PROJECT


RESEARCHERS/TEAM MEMBERS

F. Mabiri, A. Chiwara, M. Moyo

MAJOR PARTNERS

Philosophical Society of Zimbabwe, World Council of Churches, Reserve Bank of Zimbabwe (Custodian of the Courtauld Coin Collection), Iranian Embassy, ZINATHA, Associate Colleges

PROJECT DESCRIPTION

The displays will comprise religious artifacts like musical instruments, regalia, as well as a display of ancient economic systems, viz the manufacture of ancient coinage and its reception in the contemporary economic systems. PowerPoint presentations shall be used for illustrative purposes.

CONTRIBUTION TO WEALTH CREATION

The focus for this project is cultural wealth that is steeped in history and its human and material culture for example the invaluable Courtauld collection of coins stands a great chance of doing well in a museum setup, to which end many universities have set up miniature museums of Classical and religious material. Some of the coins in the collection are extremely rare, which should make Zimbabwe a major stopover destination for academics and connoisseurs of art. The project shows the importance of tapping indigenous knowledge systems through research.

TITLE OF PROJECT

History and the Archive.

RESEARCHERS/TEAM MEMBERS

J. Mujere, K. D. Manungo, M. Nyakudya, T. B Zimudzi, I. Dande, K. Manamere

MAJOR PARTNERS

National Archives of Zimbabwe (NAZ).

The partnership between the National Archives of Zimbabwe and University of Zimbabwe History Department is institutional, mutual and complementary in preserving information for posterity, future use and trying to promote institutional archives.

PROJECT DESCRIPTION

History seeks to explain important events in the coming to being of the nation, state, its people, institutions, languages and ethos. It explains why, when and how events happened the way they did. In doing so, it provides building blocks necessary for understanding the past and is important for demystifying the polemics and rhetoric that cloud the present and possibly the future. Above everything else, history is a rigorous intellectual endeavour that sharpens the intellectual capacity and provides cogent analytical skills. It also captures the fading memories of critical past events such as liberation, class and gender struggles. More importantly, it seeks to provide a pictorial journey into the past focusing on important episodes that punctuated Zimbabwe’s multi-dimensional past.

CONTRIBUTION TO WEALTH CREATION

The exhibition targets the nation at large in seeking to provide a basis for understanding the past, present and future and it also seeks to provide information to students intending to proceed towards graduate studies and researchers in the Social Sciences. The exhibition seeks to create awareness of the importance of the archives, documents and create opportunities for setting up an Institutional Archive at the University.
**TITLE OF PROJECT**

*Dancing the Nation.*

**RESEARCHERS/ TEAM MEMBERS**

K. Chikonzo, T. Mangosho and P. Mukwara

**MAJOR PARTNER**

Savanna Trust

**PROJECT DESCRIPTION**

The project seeks to outline various ethnic dances in Zimbabwe with a view of marketing them as sites of a lived material culture and heritage. It demonstrates how performed dance will complement the experience of tourists (both local and foreign) to cultural shrines. The project will empower tourism of material culture dotted around various communities in Zimbabwe.

**CONTRIBUTION TO WEALTH CREATION**

Community Tourism

**TITLE OF PROJECT**


**RESEARCHERS**

R. Kapumha, G. Pwiti, M. Mudzana, R. Katsande, P. Mlambo, S. Katsamudanga

**MAJOR PARTNERS**

D. Gronenborn of Germanisches Zentral Museum (RGZM), Germany – collaborative research

J. Fontein of the University of Edinburgh – collaborative research

B. Mapunda of the University of Dar es Salaam – collaborative research

C. Mooketsi of the University of Botswana – collaborative research

The Volkswagen Foundation, Germany

**DESCRIPTION OF THE PROJECT**

This project entails in-depth ethno-archaeological study and documentation of the animal resource exploitation, utilization processes and practices amongst three contemporary communities in eastern Zimbabwe. The aim is to obtain a clearer understanding of prehistoric farming communities' behavioural patterns in relation to animal resource exploitation within economic, socio-cultural and political realms including herd management strategies. The research has particular interest in exploring gender as a cross-cutting theme in animal resource acquisition, utilisation and disposal. Ethno-archaeology can give pointers to some of the hidden or not so obvious aspects relating to gender issues in archaeology. The gender aspect does not only refer to the men-women relationships but as a cross-cutting theme, it also seeks to understand this aspect within the exploited and utilised animal species. In this increasingly globalised world, it is also important to document traditional technologies and practices to capture and preserve those practices and keep them from being lost and forgotten in the near future.

**CONTRIBUTION TO WEALTH CREATION**

The research results will inform the development of sustainable utilisation of both domestic and wild animal species which is important for wildlife conservation. Against the background of indiscriminate and rampant killing and poaching of wild species as well as recurrent droughts and gradual decrease of domestic herds, the research results which combine archaeology, history and ethno-archaeology may inform today’s decisions on conservation strategies on wildlife which will, as a spin-off, lead to increased eco-tourism as a part and form of wealth creation. The targeted beneficiaries include the researcher, whose research capacity will be enhanced, graduate students who will be trained in archaeology and local communities in south-eastern Zimbabwe.
TITLE OF PROJECT

Creativity, Criticism and Publishing.

RESEARCHERS/ TEAM MEMBERS

J. Muganiwa, P. Mateveke, R. Chikafa and A. Mupondi

MAJOR PARTNERS

UZ – Major sponsor, College Press; Zimbabwe Publishing House (ZPH) – Publishers

PROJECT DESCRIPTION

Showcasing the Department’s research activities through displaying the actual end products of our work with varied partners. These include, but not limited to, academic and creative books, articles in journals and newspapers and programmes on television and radio.

CONTRIBUTION TO WEALTH CREATION

1. These items (academic and creative books, articles and TV and radio programmes) have monetary value because they are commercial commodities that are sold.
2. These items create knowledge within the community. This knowledge is used by people for day to day survival. These items are ideological in the sense that they create positive ways of looking at the world.
INDIGENIZATION AND EMPOWERMENT: STRATEGIES FOR SUSTAINED HUMAN AND COMMUNITY DEVELOPMENT
Research and Intellectual Expo 2013

**Title of Project**

*Educating School Dropout Girls for Wealth Creation.*

**Research Team**

R. Moyana, UZ Lead Researcher and L. Madyirapanze, FAWEZI

**Major Partners & Nature of Partnership**

Forum for African Women Activists

**Description of the Project**

The research focused on the number of girls that drop out of school because of pregnancy; how many of them return to school or not; whether they return to the same school; challenges faced and whether they finally complete school to pursue chosen careers.

**Contribution to Wealth Creation**

“Educate a girl and you educate a nation.” Educated girls have the opportunity to empower their families and raise their own children in such a way that they too are afforded the opportunity to go to school and be independent of social welfare schemes in their country. Women are important contributors to a country’s wealth creation as they form half of the nation’s population and education is key. Therefore, every girl should be assisted to complete their studies. Beneficiaries of the research are drop out girls who benefit from the research by being assisted to return to school.

**Title of Project**

*Empowering Students with Disabilities with ICT Skills.*

**Researcher(s)**

B.T. Chiparaushe

**Major Partners**

1. Student Solidarity Trust (SST)
2. Disability HIV/AIDS Trust (DHAT)
3. National Association for the Care of the Handicapped (NASCOH)
4. League of the Blind
5. Dorothy Duncan

**Project Description**

The project will display and demonstrate usage of screen reader software such as

1. JAWS for the visually impaired to use the internet and material on memory sticks.
2. Software for enlargement of print for students with low vision.
3. Equipment such as Perkins braillers, white canes, digital voice recorders, embosser and laptops.

**Contribution to Wealth Creation**

Development of high level competencies and training enables people with disabilities to participate productively in the social and economic environment.

**Title of Project**

*Shaping the Health of Adolescents in Zimbabwe.*

**Researchers/Team Members**

D. Nhamo

**Major Partners**

Pangaea Global AIDS Foundation

**Project Description**

Shaping the Health of Adolescents in Zimbabwe Project (SHAZ) is a life skills and economic intervention that seeks to economically empower HIV positive female adolescents living in Chitungwiza and Harare. The research initiative started in the year 2000 and the current phase is due to end in May 2014. The project is based at South Medical Hospital in Chitungwiza and the current cohort has a sample size of 710.
**CONTRIBUTION TO WEALTH CREATION**

The knowledge about positive living coupled with the life skills imparted to these HIV adolescents will enable them to live longer, educate their peers and engage in various income generating projects which in turn contribute tremendously to wealth creation.

**TITLE OF PROJECT**

*The Art of Beneficiation: Experiences of stone sculptors as exploited wealth creators*

**RESEARCHER(S)/TEAM MEMBERS**

Z. W. Sadomba

**MAJOR PARTNERS**

Tafara Mabvuku Art Association (TAMAA)

**PROJECT DESCRIPTION:**

This is an economic development project resulting from empirical anthropological research being undertaken with a sculpture organization in the high density suburb of Tafara-Mabvuku. The indigenization policy and programmes have mainly focused on large-scale capital base activities leaving out the small scale medium enterprises. One way of increasing the indigenized economic base is to support the small scale stone sculpture enterprises. From this study, the turn-around strategy for effective indigenization seems to lie in a grassroots based economy where empowering of the poor and weak is undertaken by providing an enabling economic environment and capacitation.

**CONTRIBUTION TOWARDS WEALTH CREATION:**

Research on Zimbabwe’s stone sculpture indicates that the small scale medium stone sculpture enterprises could increase the economic base if they are supported. The support has the capacity to uplift rural communities and individual families of practicing artists in the production chain.

**TITLE OF PROJECT**

*The Proof of Industrial Reconfiguration in Metal Manufacturing: From settler and international capital dominance to domestic indigenous players*

**RESEARCHERS/TEAM MEMBERS**

Z. W. Sadomba, K. Mujeyi

**MAJOR PARTNERS**

International Development and Research Centre (IDRC), Magaba Cooperatives and a Private Company

**PROJECT DESCRIPTION:**

This is a longitudinal study composed of three data collection phases from 2009 to 2013 covering both the formal and informal sector. The 2009 baseline research aimed at collecting general information about the hardware sector. This led to identification of metal manufacturing as an important segment in understanding informal sector systems, structures and methods in order to appreciate the changes in industrial production during and after the flight of both settler and international capital. Did Zimbabwe de-industrialize as argued by many scholars? The answer seems to be in the negative when one looks at the movement of human and capital resources from the large-scale industrial establishments to more small-scale industries.

**CONTRIBUTION TO WEALTH CREATION:**

Studies show a very highly developed human resource base in the metal manufacturing sector with skills ranging from qualified artisans to engineers, accountants, and business studies graduates. These people have managed to effectively replace the goods and services provided by the former settler and internationally dominated industry. This explains how and why Zimbabwe managed to survive through economic sanctions. They did not only sustain the economy to avert a total collapse of industry but they have developed and widened the products covering almost all categories of metal products in this industry. Secondly they have undertaken technological innovation and invention to unprecedented levels to support agriculture, mining (both large and small scale) and household equipment. This sector has managed to expand its market share in the face of unbridled aggressive import products. It is the virtual economy, sustaining family lives and the nation in general.
TITLE OF PROJECT

A Drive Towards Sustainable Development: Indigenization and Community Empowerment.

RESEARCHERS/TEAM MEMBERS

C. Manyeruke, S. Hamauswa, A. Murwira, F. Muzavazi and C. Muronza

MAJOR PARTNERS

Ministry of Youth Indigenization and Economic Empowerment, Zimbabwe Youth Council (ZYC) and National Indigenization and Economic Empowerment Board (NIEEB), University of Zimbabwe (UZ) Staff and Students.

NATURE OF PARTNERSHIP

Research and Publications, Policy Advice, Capacity Building and Engagement of Stakeholders.

BRIEF PROJECT DESCRIPTION

This project involves evidence based and action oriented research on community empowerment, indigenisation and development. It involves policy assessments and recommendations for their adjustments; researching on community empowerment programmes and youths’ projects. Research is conducted and sponsored by various funding partners including international research institutions. Stakeholders including communities are consulted. This project bridges the research gaps between communities, stakeholders and the academia. This project covers for example, youths in various sectors such as mining, agriculture, services and trading. Research on community empowerment programmes such as Community Share Ownership is also included. These projects are evaluated and the findings are shared with relevant stakeholders with the objective of improving policy formulation, implementation and evaluation of such projects and any future developmental work. Academic forums are also conducted to allow for academic introspection and dialogues with relevant stakeholders.

CONTRIBUTION TO WEALTH CREATION

The project facilitates wealth creation among communities and youths through research that is aimed at providing policy analysis and recommendations to community empowerment projects. The community programmes includes Community Empowerment Trusts; youths projects such as youths in mining, agriculture, services, infrastructural development. Therefore, the department of Political and Administrative Studies collaborates with the Ministry of Youth, Indigenisation and Economic Empowerment, Zimbabwe Youth Council, National Indigenisation and Economic Empowerment Board as well as the communities. This project aims at enhancing wealth creation in Zimbabwe.

PROJECT TITLE

Gender and National Development in Zimbabwe: A Focus on Women.

RESEARCH TEAM/MEMBERS

C. Manyeruke, D. Chimanikire, S. Hamauswa, A. Murwira, F.R Mupereki, A. Gwiza, E.Z Nyemba Mazando,

MAJOR PARTNERS

Ministry of Women’s Affairs, Gender and Community Development; Zimbabwe Women Resources Centre Network (ZWRCN) and Zimbabwe National Chamber of Commerce (ZNCC).

NATURE OF PARTNERSHIP

Research and Publications, Policy Reviews and Advice, Capacity Building and Dissemination

PROJECT DESCRIPTION

This project is designed to provide academic research in order to address historic gender disparities that are evident in Zimbabwe. It seeks to ensure gender mainstreaming in sectors such as Agriculture, Tourism, Mining, Trade (domestic and international), Banking, Manufacturing and Transport. Since 2007, the Department of Political Science and Administration has been working mainly with organisations such as ZNCC and ZWRCN on this project. The ZNCC for instance, sponsored a research conducted by the Department on women entrepreneurs in Zimbabwe, which has resulted in a lot of policy and process changes and innovations. Some of our students have researched on dissertations focusing on issues concerning women in trade, women in politics and women in decision-making positions. In addition, the project deals with women’s development and their livelihoods on an individual, community and country level which are also compared to those in the region and internationally.
CONTRIBUTION TO WEALTH CREATION

Our main target group is the Zimbabwean women, policy makers and related stakeholders. Therefore, in collaborating with ZNCC and ZWRCCN we seek to provide intellectual information to policy makers and contribute to evidence based and action research on women in Zimbabwe. This project enables the identification of weaknesses and strengths on women’s projects, which are creating wealth or have a potential to create wealth. This project therefore, links directly with women in mining, trade, agriculture, tourism and services including small and medium enterprises. This project therefore, helps to build the capacity of women and policy makers in wealth creation and their partners including the private sector and civil society.

TITLE OF PROJECT
Achieving Sustainable Peace for Development.

RESEARCHERS/TEAM MEMBERS
M. Hove, D. Mutanda, A. Katembo.

MAJOR PARTNERS
Centre for Defence Studies (UZ), Zimbabwe Staff College

PROJECT DESCRIPTION
The project attempts to link the nexus between peace and development (which is the basis of wealth creation) and the relationship between conflict and poverty/underdevelopment. War torn societies experience low levels of development or none at all and it is the thrust of this project to shed light on the advantages of a peaceful society, especially in steering development. To make it clear, the project will adopt a comparative approach in its assessment of what benefits could be accrued by a peaceful society.

CONTRIBUTION TO WEALTH CREATION
If there is peace in a country or in the world, communities focus on developmental projects that create wealth to improve their lives and nations in general. The project is expected to benefit the nation at large through imparting knowledge beneficial to a society with a long history of conflict. It is common knowledge that Zimbabwe has undergone various stages of conflict. It is against this background that peace education should be availed to these communities through various strategies.

TITLE OF PROJECT
Execution of Criminals Negates Wealth Creation.

RESEARCHERS/TEAM MEMBERS
F. Mangena and the ZACRO team

NAME OF RESEARCH PARTNERS
F. Mangena in Partnership with Zimbabwe Association of Crime Prevention and Rehabilitation of the Offender (ZACRO)

MAJOR PARTNERS
ZACRO: carries out campaigns in prisons with a view to rehabilitate offenders and integrate them into society.

PROJECT DESCRIPTION
This project looks at the issue of Crime and Punishment in Zimbabwe with the major focus being on the death penalty law and why it should be repudiated in Zimbabwe. While ZACRO will mostly deal with legal issues surrounding this subject, it will weigh in with moral issues derived from Shona traditions and culture.

CONTRIBUTION TO WEALTH CREATION
The biggest beneficiaries are prisoners, would-be-offenders and the generality of the society. The project will respond to the “wealth creation” theme in the sense that, knowledge about crime and punishment – with a bias towards the repudiation of the death penalty – is wealth itself as this will lead to a change of attitudes in terms of how people should conduct themselves. In addition that rehabilitation and re-integration programmes help to create a peaceful and wealthy society in that, those members who are re-integrated back to society become useful members of the society as they bring new skills learnt in prison. This will not only benefit the ex-prisoners only but the nation at large.
Broad Based Research Partnerships for Broad Based Wealth Creation
BUSINESS DEVELOPMENT AND MANAGEMENT
Title of Project:

Concentric Model of Moral Development in Business: Philosophical Reflections on the Development of an Ethical Business Culture in Zimbabwe

Researcher:

M. Madambi

Project Description:

The research project is a presentation of findings following investigations on the development of ethical business culture in Zimbabwe. The research examined possible causes of unethical conduct in business and analyzed them in the context of the traditional myth of amoral business (the traditional view that business and ethics are naturally incompatible). The researcher debunked the myth of amoral business and the notion of the metaphysical gap between business and ethics, before exploring ways of creating an ethical business culture in business. The project explains how ethics can develop in a concentric fashion from individual to group and organization levels. The Concentric Model applied the Converse Theory to demonstrate how ethics can also develop from the organizational through group to individual levels. This approach is a compromise or reconciliation of subjectivism, relativism and absolutism as they relate to moral development in business.

Contribution to Wealth Creation:

The researcher is consistent with the 21st century philosophy which holds that good (ethical) business practices translate to good money. It is now common knowledge that stakeholders in business (customers, bankers, suppliers, law makers, etc.) have greater affinity to business practitioners with impeccable corporate governance structures and ethical records. It goes without saying that institutions with good corporate ethics and culture make more customers compared to those with bad image. Such reputations then create opportunities for wealth creation for the company and the nation at large.

Title of Project:


Researcher:

G. Muponda

Description of the Project:

The Project investigated small furniture manufacturing firms in Zimbabwe. The study found that many Zimbabweans are endowed with great skills and talent in the manufacturing of furniture. They are currently located in “industrial clusters” or geographical conglomerations located near the high-density suburbs. Most of these artisans are ex-employees of large firms who, after being retrenched, set up their own enterprises.

Contribution to Wealth Creation:

The target beneficiaries are the SMEs owned by low-income people residing in the high-density suburbs such as Glenview in Harare, Sakubva in Mutare, Mucheke in Masvingo, Western Commonage in Bulawayo and Mkoba in Gweru. They can contribute to wealth creation through the creation of jobs for the community in which they are located. The project survey results indicate that there are more than 2,000 such firms in Zimbabwe, generating at least $4.4 million annually in revenues and employing about 10,000 people directly and indirectly.

Project Title:

Developing a Livestock Feed Business Incubation Model for Zimbabwe Graduate Youths.

Research Team:


Partners:

1. University of Zimbabwe (Department of Animal Science, Department of Agricultural Economics and Extension)
2. Ministry of Small and Medium Enterprises and Cooperatives Development
3. International Development Research Centre (IDRC)

Project Description:

The 1 year pre-business incubation project addressed the problem of unemployment of young agriculture graduates and their inability to generate viable and sustainable agribusiness enterprises for employment generation. The gap in commercial...
livestock feed production was perceived as an opportunity for entrepreneur development among these graduates. The overall objective was to develop and test a livestock feed manufacturing business incubation model for graduate youths in Zimbabwe. A survey was conducted to investigate opportunities and constraints to entrepreneurship development of agriculture graduates. The most common forms of agribusiness entrepreneurship among graduates were primary production (80%), processing (32%), manufacturing (19%), trading and retailing (18%). This business incubation intervention has the potential of solving unemployment problems among the agriculture graduates but the scope of enterprises should be broadened.

**CONTRIBUTION TO WEALTH CREATION**
Entrepreneurial development of university graduates.

**TITLE OF PROJECT**
*Strengthening Research and Leadership Capacity in the SADC Region: The Politics of Gender, Sexuality and Reproduction with a Strategic Focus on Young Women’s Agency (Aged 18-25).*

**RESEARCHERS/TEAM MEMBERS**
N. Wekwete and C. Manyeruke

**MAJOR PARTNERS**
Ford Foundation, African Gender Institute at the University of Cape Town, University of Botswana, University of Namibia, University of Witwatersrand, and University of Kwa-Zulu Natal, SAYWHAT and SAFAIDS.

**PROJECT DESCRIPTION**
The project is aimed at capacity building female students at the different university campuses in conducting action research and hence improving the lives and empowerment of young women in the SADC. Female students engage in research (dialogues/focus group discussions) and advocacy (e.g. exhibits, theatre production) so as to understand SRH challenges they face, their access to sexual and reproductive health services and education.

**CONTRIBUTION TO WEALTH CREATION**
The project is targeted at female students aged 18-25 years at the University of Zimbabwe and the other five partner universities. In summary, the project is creating knowledge and healthy students through the action research and advocacy activities, hence contributing to wealth creation.

**TITLE OF PROJECT**
*“Bridging the Development Gap?” The Case of Smallholder Farming Projects in Rural Zimbabwe.*

**RESEARCHERS/TEAM MEMBERS**
B. Kusena, E. Makombe, T. Taringana (UZ), T. Chidavarume, N. Munyikwa (WLZ)

**MAJOR PARTNERS**
Women and Land in Zimbabwe (WLZ)

**PROJECT DESCRIPTION**
The project focuses on designing research and policy papers on smallholder farming in particular and land use in general with a view to spearheading women empowerment. The department of economic history works with WLZ to identify areas requiring research in order to increase women visibility and participation in enhancing food security. Women and Land in Zimbabwe lobbies government and NGO communities to consider involvement of women at all levels of land use management and access to small plots.

**CONTRIBUTION TO WEALTH CREATION**
The project strengthens capacities of small scale farmers to achieve sustainable agriculture and improved food security.
AGRICULTURAL SOLUTIONS FOR WEALTH CREATION
**Research and Intellectual Expo 2013**

**TITLE OF PROJECT**

*Environmental Impacts of Natural and Man-made Hydraulic Structures-Case Study of Middle Zambezi Valley, Zimbabwe.*

**RESEARCHERS/TEAM MEMBERS**

I. Nhapi, S. Shumba, W. Gumindoga, A. Mhizha, E. Mashonjowa

**MAJOR PARTNERS**

University of Zimbabwe Department of Physics, University of Zimbabwe Faculty of Agriculture and Lower Guruve Development Association (LGDA)

**PROJECT DESCRIPTION**

This study sought to investigate the soil moisture and nutrient dynamics in relation to natural and man-made flood occurrence in the Middle Zambezi valley of Zimbabwe for the improvement of the livelihoods of people in the district. Results show that flooding is experienced at least once a year in the study area. Backwaters from the hydropower structure at Cahora Bassa increase the moisture content of the soil above the field capacity and provide nutrients to the soil. The backwaters and residual moisture are important in increasing crop yields thereby reducing poverty for the communities.

**CONTRIBUTION TO WEALTH CREATION**

The target beneficiaries of the project are the riverine communities in the Mbire District of Zimbabwe. The study seeks to analyse impacts of flooding on soil moisture distribution and nutrient deposition and to analyse the viability of riverbank and riverbed cultivation. These are important for maximising the water use efficiency and increasing productivity in the floodplain communities of the Mbire District. The research recommends the appropriate crop varieties to suit the soil moisture and nutrient status obtained thereby increasing the yields and incomes for the communities. There are crops which are suitable for low moisture and nutrient concentrations. The crops can also be diversified to include growing horticultural crops within the floodplains using residual moisture and this has the potential for wealth creation. This research therefore seeks to apply the principles of integrated water and natural resources management for the improvement of the livelihoods of the people in the Mbire District.

**TITLE OF PROJECT**

*Exploring the Contribution of Agricultural Innovations to Sustainable Livelihoods in Semi-Arid Areas of Zimbabwe.*

**RESEARCHERS/TEAM MEMBERS**

E.P. Mutsvangwa-Sammie, E. Manzungu

**MAJOR PARTNERS**

1. University of Zimbabwe, Zimbabwe
2. Department of Agricultural, Technical and Extension Services, Ministry of Agriculture, Zimbabwe
3. Rural farmers in Gwanda and Insiza, Zimbabwe
4. Challenge Program on Water and Food (CPWF) (Sponsor)

**PROJECT DESCRIPTION**

Agriculture is considered to be a major livelihood source for 70% of the Zimbabwean population. There is general consensus among policymakers, researchers, and development agents, that agricultural innovations are key to solving the low agricultural productivity that has been recorded in the Zimbabwean smallholder agricultural sector in general and semi-arid areas in particular. There are thus many efforts aimed at promoting agricultural innovations, by national governments, public and private research institutions. By and large the interventions are modelled on the Green Revolution, which succeeded in Asia, South America and Europe. Green Revolution is based on growing high yielding crop varieties. To succeed, the Green Revolution depends on the availability of adequate soil moisture, fertilisers and timely control of pests and diseases.

This study therefore, seeks to address to what extent Green Revolution-inspired agricultural innovations can contribute to rural livelihoods in semi-arid areas in Zimbabwe.

**CONTRIBUTION TO WEALTH CREATION**

The project aims to contribute to assessment of agricultural innovations in promoting sustainable livelihoods for rural farmers in semi-arid areas of Zimbabwe.

**TITLE OF PROJECT**

*Towards the Establishment of Agricultural Information Kiosks for Smallholder Farmers in Zimbabwe.*
RESEARCHERS/TEAM MEMBERS
T. Mataranyika, T. Gumindoga

MAJOR PARTNERS
Ministry of Information Communication Technology
Target Beneficiaries
Primary: Small Holder framers
Secondary: Agro-Dealers and Ministry of Agriculture Department of Agricultural Extension
Tertiary: NGO’s, Researchers and other stakeholders in agriculture

This partnership whereby the hi-tech space for providing customized, relevant and specific information using information communication technologies is created within the villages where small holder farmers exist, is of benefit to farmers.

CONTRIBUTION TO WEALTH CREATION
The link to wealth creation is found in that without access to quality, timely and relevant information, small holder farmers face a plethora of risks that include; risk during planting, risks during transportation and risks during marketing. Agricultural Information kiosks minimize these through; efficient communication points, provision of access to vital information on time and creation of platforms for multi-sectorial interactions with research institutions.

TITLE OF PROJECT
1. Commercialising Moringa Oleifera for Sustainable Livelihoods.
2. Evaluation of the Efficacy of Moringa Extracts in Control of Vegetable Diseases.

RESEARCHERS/TEAM MEMBERS
M. Goss, Mazarura and Ngadze

MAJOR PARTNERS
1. SCOPE – collaborative [nature of partnership and way forward still being discussed. Very initial stages.]
2. No sponsorship, team members self-funding this research

PROJECT DESCRIPTION
1. Based on the multipurpose utilizations for Moringa products, this work is aimed at value addition and packaging of these natural products into: bathing soaps/shampoos and gels, cooking oil, ointments and skin creams and natural powders.
2. Experiments were carried out to determine the efficacy of Moringa extracts in suppressing growth and development of bacterial and fungal pathogens. The research evaluated five pathogens which cause diseases such as rot roots in vegetables, of these five, Moringa extracts proved effective in suppressing the growth of three pathogens.

CONTRIBUTION TO WEALTH CREATION
1. Women farmers already involved in this project will benefit from increased production since they are the intended production units for increased Moringa raw material. Sale of the processed products will benefit the economy at large and the women farmers being the raw material providers will have an income source for enhanced livelihoods and financial stability.
2. Improved extraction methods will result in a low cost biocide which will be accessible for most small scale commercial farmers. There is the potential also of developing this product commercially.

TITLE OF PROJECT
Effects Of Helichrysum Kraussii on Rangeland Productivity and Animal Production.

RESEARCHERS/TEAM MEMBERS
P. Mugabe, M. Masocha, G. Jacob

PARTNERS
Makoholi Research Institute & Farmers
PROJECT DESCRIPTION

Project entails the evaluation of rangeland with high Helichrysum species for florist composition, degradation parameters and biomass production. Also the evaluation of carrying capacity in degraded rangeland in order to come up with interventions for improved livestock output and improved farmers living conditions.

CONTRIBUTION TO WEALTH CREATION

Livestock especially cattle provide income, draught power, food and hence factors that reduce their production potential affect economic growth and living standards. Rangeland provide 90% of communal livestock’s requirement with regard to feed hence improving rangeland productivity improves livestock output and living standards.

TITLE OF PROJECT

Enhancing Productivity, Market Participation and Climate Change Adaptation in Smallholder Farming.

RESEARCH TEAM


MAJOR PARTNERS

The Soil Fertility Consortium for Southern Africa (SOFECSA); Makoni and Wedza Districts; Department of Research & Specialist Services (DR&SS); AGRITEX; Windmill; Zimbabwe Fertilizer Company (ZFC); International Maize and Wheat Improvement Centre (CIMMYT); Seed Co; Pioneer; Agriseeds; Climate Change Office; Agricultural Research Council (ARC); African Conservation Tillage Network (ACT); Environmental Management Agency (EMA); GROWNET (agro-equipment manufacturer); Agribank; Zimbabwe Farmers Union (ZFU); Grain Marketing Board (GMB); and University of Zimbabwe Departments in the Faculty of Agriculture as well as the Department of Geography and Environmental Sciences; European Union (SOFECSA_ABACO Project); The IDRC/DFID-Climate Change Adaptation in Africa (CCAA); International Foundation for Science (IFS); Systems for Analysis, Research and Training (START) and the University of Zimbabwe Research Board.

PROJECT DESCRIPTION

The SOFECSA-UZ research group, working jointly with National Agriculture and Extension Systems (NARES), private seed and fertilizer companies, local banks and farmer organizations, is employing innovation platforms and field-based farmer learning centre approaches to promote technical and institutional options for increasing agricultural productivity and farmer income, and enhancing the adaptive capacity of smallholder communities to impacts of climate change. Participatory Action Research (PAR) methodologies coupled to the afore-mentioned co-learning approaches to enable both the agro-service providers and farmers to integrate indigenous and scientific knowledge towards increased technology uptake and development of market oriented production systems. The research has proved that Integrated Soil Fertility Management (ISFM) and Conservation Agriculture (CA) technologies are critical entry points for breaking a ‘maize-poverty trap’ that is currently deepening food insecurity and poverty in rural communities. The SOFECSA activities have demonstrated a research for development framework that enhances the capacity for self-mobilization and self-organization among smallholder farming communities to collectively access production inputs (including information and knowledge) and adopt resource conserving technologies. This has enabled them to achieve household food self-sufficiency and diversifying into high value cash crops and off-farm activities against negative impacts of climate change.

CONTRIBUTION TO WEALTH CREATION

Farmers are the ultimate beneficiaries of the research processes as their capacity to increase productivity, access technologies and participate in profitable markets is enhanced. The research seeks to enable farmers and diverse actors along agricultural value chains to identify viable options for diversification into high value and climate resilient crop and livestock production systems and to participate in organised markets. Enhanced knowledge sharing and technology access by farmers and service providers through the innovation platforms and learning centres is envisaged to offer opportunities for commercializing smallholder agriculture as well as for diversification of their livelihood options beyond agriculture.

TITLE OF PROJECT

Feed Quality and Performance of Broilers Fed Feeds from Different Suppliers in Zimbabwe.

RESEARCHERS/TEAM MEMBERS

S. Ncube, P.T. Saidi, V.E. Imbayarwo-Chikosi and V. Hamandishe

MAJOR PARTNERS

Broiler Feed Manufacturing Companies.
PROJECT DESCRIPTION

Broiler production activities have a potential to alleviate extreme poverty as well as addressing human protein deficiency because most families have resorted to broiler production activities as a source of living. However, success of broiler activities depends on the quality of feed. Under both the small scale and large scale farming sectors, there is variation among farmers on 42 day weights of broilers. It is thought that, feeds from certain producers are to blame as there has been mushrooming of poultry feed manufacturing companies with no increase in feed quality monitoring efforts from the relevant authorities. The project therefore sought to determine the quality of broiler feed on the market and evaluate performance of broilers fed the four most preferred brands by customers. Farmers preferences were associated with lower cost of production or higher final weights. There were noted differences on the crude protein and ether extract composition but at 42 days, broiler body weights were not significantly different.

CONTRIBUTION TO WEALTH CREATION

Promoting uniformity in the feed manufacturing company as feed constitutes the greatest cost in broiler production
A HEALTHY NATION A WEALTHY NATION
DISEASE RESEARCH
TITLE OF PROJECT
HIV and Cancer Research.

RESEARCHERS
Z. M. Chirenje, T. Chipato, J. Hakim, M. Mbizvo and S. Miller

PARTNERS
University of California San Francisco (UCSF)

PROJECT DESCRIPTION
The University of Zimbabwe-University of California San Francisco Collaborative Research Programme (UZ-UCSF) was established in 1994 to implement high quality science addressing HIV prevention and therapy; its aim is to control Zimbabwe’s HIV/AIDS epidemic and contribute to global policy as a center of excellence at the University of Zimbabwe College of Health Sciences (UZCHS) in collaboration with UCSF and its partner institutions. UZ-UCSF has well-established infrastructure consisting of 2 administrative sites, a Central Laboratory located at the UZCHS, and a Central Pharmacy to support its 6 Clinical Research Sites (2 in Harare and 4 in Chitungwiza). A bio safety level 3 containment laboratory was recently established at the Wilkins Infectious Diseases hospital in Harare with capacity to support high level clinical trials for diagnosis and treatment of TB as well as to support research on MDR TB and X-DR TB.

CONTRIBUTION TO WEALTH CREATION
Research on cervical Cancer screening using visual inspection with acetic acid results adopted by Ministry of Health and Child Welfare as an alternative to cervical cytology (Pap smears) in screening for cervical cancer method. Study results from the HPTN 046 trial conducted at the UZ-UCSF influenced the Ministry of Health and Child Welfare’s policy decision to adopt PMTCT Option A in the World Health Organization 2010 guidelines. The results from these and other studies contribute towards improving the quality of life of Zimbabweans allowing them to participate fully in the socio-economic activities.

TITLE OF PROJECT
Seroprevalence of Leptospirosis in Dogs in Urban Harare and Selected Rural Communities in Zimbabwe.

RESEARCH TEAM MEMBERS
D. M Pfukenyi, Matope, Dhliwayo.

PARTNERS
Aware Trust Zimbabwe

PROJECT DESCRIPTION
A cross-sectional study was conducted to investigate seroprevalence of Canine Leptospirosis in urban Harare and five selected rural communities in Zimbabwe and to assess public awareness of the disease. Sera from randomly selected dogs were tested for antibodies to the serovars Canicola, Grippotyphosa, Icterohaemorrhagiae and Pomona of Leptospirain terrogans using an enzyme-linked immunosorbent assay. Clinical chemistry was performed on all seropositive and selected seronegative sera to screen for hepatic and renal insufficiency. This study showed that, leptospirosis was present and represented a risk to dogs from urban Harare and the selected rural communities in Zimbabwe. Availing training programmes for dog owners would be beneficial in improving disease control and reducing the public health risk of pet zoonoses.

CONTRIBUTION TO WEALTH CREATION
Diseases such as Leptospirosis affect humans worldwide. These diseases are acquired from animals and are transmissible to man. Controlling these diseases in animals reduces the burden of this disease in man, ultimately reducing costs incurred in treating human beings.

TITLE OF PROJECT
Cancer and Oral Health.

RESEARCHERS/TEAM MEMBERS
M.M Chidzonga/UZ-CHS Department of Dentistry

MAJOR PARTNERS
UZ-CHS Oral Health Centre
NATURE OF PARTNERSHIP
Clinicians in the UZ Oral Health Centre documenting oral cancer manifestation and the epidemiology of cancer in Zimbabwe

PROJECT DESCRIPTION
Documentation of oral cancers in the clinic, map out possible geographic distribution, feasible treatment modalities and preventative strategies

CONTRIBUTION TO WEALTH CREATION
Prevention, awareness, early diagnosis and management of oral cancers. Patients will benefit leading to more productivity for wealth creation.

TITLE OF PROJECT
Oral Health in HIV and AIDS.

RESEARCHERS/TEAM MEMBERS
M.M Chidzonga/UZ-CHS Department of Dentistry

MAJOR PARTNERS
UZ-CHS Oral Health Centre

NATURE OF PARTNERSHIP

PROJECT DESCRIPTION
The Documentation of Oral Manifestations of HIV and AIDS with a view to raise awareness among the health practitioners and the public. This will lead to early diagnosis and hence management of infected persons.

CONTRIBUTION TO WEALTH CREATION
Early diagnosis of HIV infection so as to institute preventive and early management protocols to improve quality of life for patients, ultimately improving their productive capacities.

TITLE OF PROJECT
A Randomized Controlled Trial of Point-of-Treatment Genexpert MTB/RIF Assay for Diagnosis of TB at Mabvuku Polyclinic Harare, Zimbabwe.

RESEARCHERS/TEAM MEMBERS
Zijenah1 L S, Bara W2, Bandason T3, Gwambiwa B1, Makoga P3, Makamure B3, Mhaka J1, Chipiti M1, Kaguru P1, Nyauzame B1, Pswarayi T1, Mungofa S1, Mason P3. University of Zimbabwe College of Health Sciences, Department of Immunology1, City of Harare Health Services, Ministry of Health and Child Welfare2, Biomedical Research Training Institutes3, Harare,

MAJOR PARTNERS
1. Mabvuku Polyclinic (Study Clinic).
2. City of Harare Health Services, Ministry of Health and Child Welfare (Study Collaborator).
3. Biomedical Research and Training Institute (Study Collaborator).
4. European and Developing Countries Clinical Trial Partnership (Study Sponsor).

PROJECT DESCRIPTION
Tuberculosis (TB) is a major global health priority and kills more than 1 million people annually. Diagnostic tests introduced more than 100 years ago, still in use today, miss 50% of patients with TB, posing major hurdles for TB control. These tests have become increasingly inaccurate in the face of the HIV/TB pandemic. Consequently, many patients with TB remain undiagnosed and continue to spread the disease within the community.

The GeneXpert MTB/RIF developed in 2009 (Cepheid, USA) is an automated PCR assay which detects TB and Rifampicin resistance simultaneously. In 2010, WHO endorsed its roll-out for investigations of TB suspects especially in high HIV prevalence settings and in patients with suspected multidrug resistant TB.

We conducted a randomized controlled trial of 400 TB suspects to examine the feasibility and impact of a point of treatment Gene Xpert MTB/RIF assay compared to routine fluorescence smear microscopy at Mabvuku Polyclinic, a primary health care centre.
CONTRIBUTION TO WEALTH CREATION
A healthy nation is a productive nation. Rapid diagnosis and same day treatment of TB prevents TB transmission and consequently reduces morbidity and mortality amongst TB patients. The one stop shop design study integrated point of care HIV/MTB diagnosis and same day point of treatment for TB and/or AIDS. The AIDS/TB pandemic has crippled productivity in the country. Rapid diagnosis and treatment of the two co-pandemics, will lead to a healthy population which will contribute to the creation of wealth in the country through regular reporting to work.

TITLE OF PROJECT
HIV Associated Ocular Surface Squamous Neoplasias in Zimbabwe.

RESEARCHERS/TEAM MEMBERS
R. Masanganise, I. Gwanzura, R. Schooley

MAJOR PARTNERS
The Regents of the University of California, San Diego, USA.

PROJECT DESCRIPTION
The project seeks to establish the aetiological factors associated with HIV-associated Ocular Surface Squamous Neoplasias (OSSN) in Zimbabwe with the hope of designing preventative measures.

CONTRIBUTION TO WEALTH CREATION
This cancer affects the face and all HIV-infected people are at risk of getting this malignancy. The face is the individual’s front desk. Prevention of this cancer or early treatment ensures HIV-infected people’s public image.

TITLE OF PROJECT
The Revolution in my Head: Performing and Aestheticizing Mental Health Data.

RESEARCHERS/TEAM MEMBERS
Chivandikwa N, 10 disabled students, 5 Theatre Arts students, 2 health professionals.

MAJOR PARTNERS
SAFAIDS, ZBC and Savanna Trust

PROJECT DESCRIPTION
The project explores the extent to which applied theatre forms can represent, disseminate and validate research findings on negative perceptions on mental health ‘patients’ and their implications to wealth creation and distribution. The project will involve 15 students (10 from the Disability Resource Centre (DRC) and five from Theatre Arts Department.

CONTRIBUTION TO WEALTH CREATION
The performance and visuals will impart knowledge to people and that will result in the change of perceptions about mentally challenged people hence the knowledge is a form of wealth.

TITLE OF PROJECT
Enabling Access to High Quality PMTCT Services by Community and Facility Strengthening in Masholand Central Province, Zimbabwe.

RESEARCHERS/TEAM MEMBERS
G. Musingwini, A. Mushavi, M. Mucheche

MAJOR PARTNERS
Population Council

PROJECT DESCRIPTION
Population Council in partnership with Zimbabwe AIDS prevention project are supporting the Ministry of Health and Child Welfare in implementing facility level interventions including staff training, mentoring and infrastructure strengthening to increase quality and scope of PMTCT services across 21 health facilities in Mashonaland Central province. ZAPP-UZ is using a set of communities, mobilising activities which include peer counselling, support groups for HIV positive women and their partners, household follow ups to enhance adherence to PMTCT cascade and community engagement to promote male
involvement. The project will help identify facility and community based gaps and track the effect of strengthening interventions at both levels. The effectiveness of the program will be assessed by measuring the cost per infection averted.

**CONTRIBUTION TO WEALTH CREATION**

An effective PMTCT program will reduce new infections of HIV in infants hence reduce the national health budget.

**PROJECT TITLE**

Translating knowledge into action with evidence based healthcare for improved clinical care and research: Using up-to-date clinical decision support.

**RESEARCH TEAM**

A. C. Chikonzo, M. Muzringa, N. Nhendodzashe

**MAJOR PARTNERS**

Novel Education Clinical Trainers and Researchers, NECTAR, Global Health Delivery Online, Parirenyatwa, Harare and Chitungwiza Hospitals.

**PROJECT DESCRIPTION**

Evidence based healthcare is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The Library believes that it plays an important role in improving healthcare delivery service at the same time reducing healthcare costs through the delivery of quality healthcare information.

**CONTRIBUTION TO WEALTH CREATION**

Access to point of care resource helps in addressing the core health priority needs of Zimbabwe such as HIV/AIDS, malaria and tuberculosis, maternal and child health and communicable diseases. Other benefits include reduced length of stay and hospitalization; standardization of care and treatment; improved patient safety and reduced mortality, relevant changes in physician diagnostic and treatment decisions and stimulation of medical research. This has the effect of contributing towards sustainable quality healthcare interventions thereby resulting in reduced healthcare expenditure for the nation which translates into millions of dollars in savings.

**TITLE OF PROJECT**


**RESEARCHERS**

R. Nyamakura

**MAJOR PARTNERS**

Psychosocial Support, Research and Training Centre (PSRT Centre), Vulnerable Children (OVC), People living with HIV and AIDS (PLWHIV).

**PROJECT DESCRIPTION**

The burden of stress among HIV positive adolescents is a cause for concern. The burden may further be confounded by adolescents’ ineffective coping mechanisms. While adults may cope with the burden of HIV related stress, adolescents often lack the relevant coping skills. There has been limited understanding of how adolescents cope with the burden of stress. The aim of the study was to describe the magnitude of stress and characterize the ways of coping with stress among HIV positive adolescents. On univariate and multivariate logistic analysis, those participants utilizing “minimizing the situation” as a way of coping were associated with the highest risk of developing stress and even a complication called Post Traumatic Stress Disorder. The most effective approach in dealing with HIV related stress was found to be the “active ways of coping”. We would therefore want to use the Research and Intellectual Expo as a platform for disseminating our important findings, distribute impact messages as well as provide on-site interaction with professional counsellors who will also provide crisis interventions whenever the need arises.

**CONTRIBUTION TO WEALTH CREATION**

Adolescents form part of the young generation affected by HIV & AIDS. Interventions to assist the HIV positive adolescents to cope with HIV related stress are necessary for the psychological health and well-being of this potential productive population. This project advocates for active ways of coping with stress to strengthen the health of the young generation. The young generation forms part of the productive national workforce with a potential of boosting the economy and wealth of the country. Therefore, safeguarding and maintaining their health is of paramount importance.
**TITLE OF PROJECT**  
*Health is the Pillar of Wealth Creation.*

**TEAM MEMBERS**  
Student Health Services Clinic Staff and Staff Clinic & HAPS Centre (UNESCO Chair Staff)

**MAJOR PARTNERS**
1. Ministry of Health and Child Welfare  
2. National Aids Council (NAC)  
3. Population Services International (PSI)  
4. Newlands OI Clinic  
5. Centres for Disease Control (CDC)

**DESCRIPTION OF THE PROJECT**  
In this project we are going to concentrate our exhibition on the preventive approach, showcasing the services that we offer to students, staff and surrounding communities.

**CONTRIBUTION TO WEALTH CREATION**  
The University has a critical mass of undergraduate and postgraduate students who contribute significantly contribute to economic development through high level competencies developed through university education. The role of the Student Health Services in protecting the health of the registered students dissemination of information and development of health knowledge is a critical in economic development of the country.

**TITLE OF PROJECT**  
*Plan of Action for National Control of Schistosomiasis and Soil Transmitted Helminths in Zimbabwe.*

**RESEARCHERS**

**MAJOR PARTNERS**
UNICEF, WHO

**PROJECT DESCRIPTION**  
The project focuses on “Analysis on the burden of helminths-Plasmodium falciparum polyparasitism, effect on anaemia and the role of integrated school based parasite control and health education in Zimbabwe”. As part of the National plan for the control of schistosomiasis and STH, a national survey was implemented throughout Zimbabwe including the 3 Metropolitan Provinces for the first time. Results led to policy formulation for NTDs and drafting of the Master plan for NTD control in Zimbabwe, a tool that is now used to source support for the program.

**CONTRIBUTION TO WEALTH CREATION**  
Schistosomiasis and STH infection affect cognitive development of primary school children, worker productivity and is associated with HIV transmission. Control of the two diseases will contribute towards improvement of cognition in primary school age children and hence Universal Education and a future skilled workforce that will contribute towards wealth creation. Improvement of reproductive health problems associated schistosomiasis and STH will ensure healthy mothers and a healthy nation that is responsible for wealth creation.

**TITLE OF PROJECT**  
*Anti-Retroviral Research for Watoto (ARROW).*  

**RESEARCHERS/TEAM MEMBERS**
Principal investigator: D Gibb, CTU (UK); Harare site PI: K J Nathoo, coPI M Bwakura-Dangarembizä (Dept of Paediatrics and Child health, UZ CHC);UK, M Thomason, Local: F Mapinge, E Chidživa; PI, CoPI, trial manager, pharmacist, data manager, medical doctors (2) 7 nurses, admin, clerks etc

**MAJOR PARTNERS**
MRC Clinical trials Unit (UK).
BRIEF PROJECT DESCRIPTION
At the end of 2011, around 2 million children worldwide were in need of HIV treatment (antiretroviral therapy – ART). Of these, only 28% were actually receiving it, which is much lower than the proportion of adults in need of treatment and receiving it. The ARROW (Anti-Retrovirus Research for Watoto) trial was a large randomized controlled trial that looked at several important questions about which treatment approaches are best for HIV-infected children and ways of increasing access to treatment in low-income settings. It was carried out in Zimbabwe and Uganda, and involved more than 1,200 children from the ages of 3 months to 17 years. These children were followed up for up to 5 years (average 4 years). Arrow was a 5 year project completed in June 2012.

ARROW also looked at which combination of anti-retroviral drugs should be used for children. At the moment, most children in low-income countries are treated with three drugs, including two from the NRTI class, and one from the NNRTI class. ARROW compared this approach to starting treatment with four drugs (3 NRTIs, and 1 NNRTI), then reducing it to 3 drugs (either 2 NRTIs and 1 NNRTI, or 3NNRTIs) after the first 8 months.

ARROW also investigated whether once daily dosing of ABC+3TC was non-inferior to twice daily dosing. The results from these two arms were very similar in terms of adherence, strength of immune system, safety and clinical outcomes. This provides the potential to simplify ART for children. The results have been communicated to the WHO ART guidelines working group, to help inform discussions on the revised guidelines that will be issued later this year.

CONTRIBUTION TO WEALTH CREATION
Capacity building among study staff: training in good clinical (research) practice, quality clinical care for the children with HIV, including skills in counseling, data collection, anthropometric measurements. Care givers who have been exposed to high quality of care and repeated counseling regarding adherence have potential to become peer counselors.

TITLE OF PROJECT
Family Aids Initiative Programme.

RESEARCHERS/TEAM MEMBERS
W Chandisarewa and V Makani

MAJOR PARTNERS
Elizabeth Glaser Paediatric AIDS Foundation

BRIEF PROJECT DESCRIPTION
The family AIDS Initiatives programme supports the Ministry of Health and Child Welfare to implement the national PMTCT program at 19 sites in Chitungwiza and Gweru cities. The programme facilitates the provision of comprehensive PMTCT services that are linked to care, treatment and support through community mobilisation, education and training, mother baby follow up, family centred psychosocial support services, operations research, documentation and advocacy.

CONTRIBUTION TO WEALTH CREATION
The elimination of new HIV infections in children and keeping mothers and their families alive.

HIV prevention in children is the wealth future of the nation.

TITLE OF PROJECT
Heart Failure in Parirenyatwa Hospital – A Prospective Longitudinal Study.

RESEARCHERS
N. T. Munyandu, E. Dzvinyai

MAJOR PARTNERS
Parirenyatwa Hospital
Department Of Medicine College Of Health Sciences
University Of Zimbabwe Research Board

PROJECT DESCRIPTION
This is an observational study of patients admitted to the adult medical wards at Parirenyatwa hospital over a 12month period with a diagnosis of heart failure to determine their demographic features, risk factors for heart failure, signs and symptoms, results of investigations, medications used and the outcome of admission. The patients would be followed up for six months to determine rate of readmission death and compliance with medications.
CONTRIBUTION TO WEALTH CREATION

To create wealth it is important to be in good health. Heart failure in developing nations tends to occur in relatively young people who are economically active. This study is an audit of how heart failure patients are faring in our major referral hospital and could be followed up by interventional studies that will improve outcomes and create healthier people who are better able to create wealth.
HUMAN RESOURCES DEVELOPMENT: HIGHER EDUCATION AND TRAINING
**Research and Intellectual Expo 2013**

**Title of Project**

*Internationalization of Postgraduate Research to Enhance Sustainable Livelihoods.*

**Researchers/Team Members**

- Z. Gambahaya, A.T. Chikwama

The Postgraduate Centre is committed to its pivotal role of coordinating, harnessing and upholding the University of Zimbabwe’s highly recognized international standards in conducting researches which address diverse national, regional and international demands.

1. MSc. Tropical Resource Ecology (MTRE): Faculty of Science
2. WATERNET Masters in Integrated Water Resources Management (IWRM): Faculty of Engineering
3. Southern and East African Regional Centre for Women’s Law (SEARCWL): Faculty of Law
4. Regional Universities Forum for Capacity Building In Agriculture (RUFORUM): Faculty of Agriculture
5. Masters of Science (MSc) in Economics: Faculty of Social Studies.

**Contribution to Wealth Creation**

The regional and international collaborative research in postgraduate degree programmes aims to improve the livelihoods of people, plants and animals, and focus on both science and humanities which contributes to social and economic development of the country.

**Title of Project**

*Schools for All - Inclusive Education.*

**Researchers/Team Members**

- T. Chataika, D. Chakuchichi, Dr. Nyaruwata

**Major Partners**

1. Lenard Cheshire Disability International (LCDI) (Through its branch - Leonard Cheshire Zimbabwe Trust [LCZT]) – sponsor
2. Zimbabwe Open University – (research partner)

**Project Description**

The United Nations Convention on the Rights of Persons with Disabilities that came into force in 2008, established inclusive education as a legal right. It is from this understanding that the Zimbabwe Branch, the Leonard Cheshire Zimbabwe Trust (LCZT) embarked on promoting inclusive education in mainstream schools. LCZT then engaged the project to evaluate the All-Inclusive Education Project, which was a three-year project. The project evaluated the impact of the LCDI & LCZT Schools for All - Inclusive Education project, which was implemented in 21 schools from the four provinces, namely: Harare, Mashonaland West, Mashonaland East and Midlands.

**Contribution to Wealth Creation**

- **Beneficiaries:** Enhances the health and productivity of children with disabilities and their families; Communities; School authorities, including teachers.
- **Benefit:** Sustainable development starts with people who tolerate each other, learning together in inclusive settings, and thus promoting inclusive communities, working towards inclusive development, where people with disabilities can also compete in the labour market, instead of viewing them as objects of charity.

**Title of Project**

*Curriculum Interventions or Mitigating the Impact of HIV/AIDS in the Classroom*

**The Research Team**

- R. Kasembe, C. Mukundu, M. Nyamukunda

**Major Partners**

2. Higher Education Institutions (HEIs) from Southern Africa.
3. University of Zimbabwe
4. University of Botswana
5. University of Zambia
6. University of the Copper belt
7. Eduardo Pedagogical Institute
8. Mauritius Institute of Education
9. University of South Africa
10. Lesotho College of Education
PROJECT DESCRIPTION
With the HIV/AIDS prevalence rate at 14.3%, Zimbabwe is rated among the worst affected nations in Southern Africa, and the world. This project thus, seeks to enhance teachers’ capacities to effectively integrate HIV and AIDS education in the secondary school curriculum in a bid to reduce its negative impacts on the quality of education and hence quality of life of youths living in contexts of risky and vulnerability related to HIV and AIDS. The ultimate goal of the project is to create socially sustainable communities through developing capabilities and agency for positive social transformation. The project is a response to a number of local and regional policies and declarations which recognises the important role of education as a vehicle for achieving sustainable development.

CONTRIBUTION TO WEALTH CREATION
The research team works with a group of students, teaching and supporting staff from Parirewa High School in Domboshava in ways that allow them to identify capacity gaps that constrain them from doing what they value to do. Training offered include but is not limited to, how to teach for the development of life skills in contexts of risky and vulnerability related to HIV and AIDS, how to teach for the development of functional literacy and how to strengthen school-community linkages. The project seeks to create wealth by empowering teachers to work with students in the Interact Club in ways that develop their capacity to start small income generating projects such as establishing nurseries, making material from waste and gardening to improve their livelihoods.

TITLE OF PROJECT
AIDS International Training and Research Program (ATRP).

RESEARCHERS/TEAM MEMBERS

MAJOR PARTNERS
State University of New York at Buffalo, Buffalo New York, USA.

PROJECT DESCRIPTION
Collaborative research training for postgraduate and postdoctoral fellows in HIV and AIDS pharmacotherapy, drug development using nanotechnology. Promotion of partnership between Government, private sector (pharmaceutical industry), and academic and research institutions

CONTRIBUTION TO WEALTH CREATION
1. HIV treatment for a healthy workforce.
2. Use of emerging technologies in development research towards pharmaceutical manufacturing

TITLE OF PROJECT
Health Professions Education.

RESEARCHERS/TEAM MEMBERS
M. Chidzonga

MAJOR PARTNERS
Professor Jose Frantz of the University of Western Cape, South Africa
Collaboration in Health Professions Education
UZ-CHS

PROJECT DESCRIPTION
Training in Health Professions Education with a view to establishing a Department of Health Professions Education. This will provide continuing health professions education training in the UZ-CHS. We hope to have professional teachers trained at postgraduate diploma, MPhil and Doctorate levels.
Current research interest is in the development of Health Professionals, students learning and teaching at UZ-CHS.

CONTRIBUTION TO WEALTH CREATION
Creation of well trained and motivated Health Professions Educators to improve quality in teaching and learning thereby improving the delivery of healthcare in Zimbabwe. Lecturers and students to benefit from focused training and this will
enhance quality of healthcare leading to a healthy and productive population. Raising the quality of training of Medical Educators provides high quality doctors training curriculum for personnel safe guarding the health of the nature.

**TITLE OF PROJECT**
*Tuning Africa for Wealth Creation.*

**RESEARCH TEAM**
R. Moyana, Faculty of Education

**MAJOR PARTNERS**
The major partners are the European Union who co-ordinate 60 African Universities.

**PROJECT DESCRIPTION**
The research focuses on developing competences that universities in Africa can use as benchmarks for their students in the following disciplines: Teaching Education, Civil and Mechanical Engineering, Medicine and Agriculture. Research also focuses on how to factor in these competences in course outlines and how to ascertain that on exit, graduates exhibit the required and needed competences.

**CONTRIBUTION TO WEALTH CREATION**
One of the biggest assets that Zimbabwe has and has exported is the human capital. Teachers are a great guarantor of that human capital and, therefore, it is crucial that the teachers are expertly equipped to teach pupils in a way that would result in them being the invaluable, enduring future human capital. That, in turn, guarantees wealth creation if the competences are properly imbibed and made use of by the school graduates as they become creators of employment, among other things.

**TITLE OF PROJECT**
*University of Zimbabwe College of Health Science - NECTAR Program (MEPI).*

**RESEARCHERS/TEAM MEMBERS**
J. Hakim, J. Matenga, S. Nhiwatiwa

**MAJOR PARTNERS**
University of Colorado Denver, Stanford University, University College London, Kings College London,(Collaborative Partnership in Implementation of MEPI activities) Funded by National Institutes of Health and PEPFAR through Fogarty International Centre

**PROJECT DESCRIPTION**
UZCHS is one of the 13 Sub-Saharan Africa medical schools that received funding from National Institutes of Health and PEPFAR in 2010 of USA for the purposes of developing or expanding and enhancing models of medical education. These models are intended to support the goals of increasing the number of new health care workers trained, strengthen medical education systems in the countries in which they exist, and build clinical and research capacity in Africa as part of retention strategy for faculty of medical schools and Clinical Professors. The NECTAR program and its two contributed awards (CHRIS and IMHERZ) are implementing activities that are intended to meet the three themes of MEPI i.e. increasing quality and quantity of health care workers trained, retention of those workers in areas that they are critically required and capacity building in regionally relevant research. Some of the activities being implemented include training in cardiovascular diseases, training in mental health, research related and medical education related such as faculty development, mentored research scholars and mentored clinical scholars programs

**CONTRIBUTION TO WEALTH CREATION**
The activities of the UZCHS-NECTAR program all but point to the strengthening of the country’s health system by ensuring that there are enough doctors in the country and also that they are retained in the areas that they are critically required. Faculty research capacity building also plays a key role. By ensuring that health systems are strengthened this will promote social well-being where people live healthy and happy lives. Once people have a healthy life mentally and physically, they will be able to participate fully in national activities, be they social, economic, political and technological. In addition, the strengthening of research activities will promote generation of new scientific ideas, better ways of doing things and new products. Some of the new ideas generated through research can be used in policy formulation by the government for the betterment of our economic activities.
BASIC EDUCATION
FOUNDATIONS FOR SUSTAINED DEVELOPMENT
**Title of Project**
*Unlocking Economic Potential through Linguistic Capabilities.*

**Researchers/Team Members**
V. Mugari, L. Mukaro, A. Dhumukwa, E. Mafunda, L. Mutonga, J. Mutangadura and P. Kufakunesu

**Major Partners**
St Giles, Dept. of Electrical Engineering and World Links, Ms Kim: (Korean Agent) and CI UZ.

**Project Description**
The mandate of the Linguistics Department is to impart the scientific knowledge about language facts, ranging from basic, social, and specialist to technical. The importance of indigenous languages is also of critical importance. Against this background, the research interests and research partnerships seek to enhance appreciation and understanding of the linguistic skills in language learning, teaching and recovery, societal relations, nation building, cultural heritage, indigenous knowledge preservation and economic development.

**Contribution to Wealth Creation**
The research programmes target the second language teachers and learners of English, Shona and Chinese, Aphasic Patients and speech therapists. It creates intellectual wealth along minority language researches to help curb language death and retain access to indigenous knowledge system through local languages.

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**Title of Project**
*Quality Education (Reading and Action Research).*

**Researchers/Team Members**
A. Mamvuto, O. Mavundutse, R. Gatsi

**Partners**
Save the Children / University of Zimbabwe DTE

**Project Description**
To contribute towards the achievement of quality education
1. Work shopping teachers’ college lecturers in action research methodologies and reflective practice.
2. Work shopping primary school teachers in the teaching of reading from grade one to seven.
3. Monitoring and evaluating the implementation of the two projects.

**Contribution to Wealth Creation**
The projects generate wealth through acquisition of knowledge, skills and attitudes relevant to reflective practices in teacher education and schools. Primary school teachers are equipped with effective strategies in the teaching of reading across the curriculum. Each of the projects has resulted in several publications including articles and books.

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**Title of Project**
*Localised Language (Shona) Early Learner Reader Android Application (Shona Speech Synthesizer).*

**Researchers/Team Members**
I.N. Mutamiri; G. Brooking; V. Mugari

**Major Partners**
1. F.I.R.E. (Funding for Internet Research Education) – funding for school tablets and research Collaboration between Depts. of Electrical Engineering, Linguistics and Education on research
2. Ministry of Education Sports and Culture, Mr Sithole of E.T.C (Educational Training Centre)
3. UNESCO – Providing Shona linguistics training skills, and measurement and evaluation guidance Computers for Zimbabwe Schools providing to rural schools, and technical support

**Project Description**
Currently there are thousands of children in the rural areas with little or no access to early-learning material. UNESCO points out the advantages of mother tongue based education in the early years. When children are offered opportunities to learn in their mother tongue, they are more likely to engage and succeed in school. Digital tablets, offer an intuitive, rich platform
for children to learn, in comparison to the ordinary pen-paper methods. Research has shown that, children who have had a more interesting way of learning a certain concept will commit it to memory and apply it better. Although these tools exist for languages such as English, currently there is no Android Text-to-Speech (TTS) for local Zimbabwe languages, like Shona, and hence no vernacular early learner teaching tools are available. The research has involved the development of a Text-to-Speech for Shona. Using this Shona TTS, the project is developing a localized early learning reading tool for the Android tablet.

CONTRIBUTION TO WEALTH CREATION
The premise is that, education provides the platform for wealth creation. With a highly literate as well as ICT literate population, it will greatly enhance individuals’ opportunity for wealth creation and thus ultimately the nation.

Directly the Shona TTS voice can be used in a variety of assistive tools and speech-enabled applications that can be sold commercially, namely:
1. Games (educational game development for PC/Tablet),
2. Readers,
3. Learning tools (E-learning, mobile or PC)

Applications may be developed by third parties and then licenses sold to them for use. The project is creating an in-house application, to illustrate this. The application will start by Shona phonetics, and move to phrases, full sentences then comprehension. TTS may also be offered as an online service - where users can pay monthly fees for access to large databases of voices and other TTS-related functions for their own personal/private use.

TITLE OF PROJECT
The Comprehensive English Literacy Test of the University of Zimbabwe.

RESEARCHERS/TEAM MEMBERS
C. Dyanda and N. Takaendesa

MAJOR PARTNERS
Primary schools in Zimbabwe

DESCRIPTION OF THE PROJECT
The CELTUZ-Primary project is a set of English literacy diagnostic tests which are used to establish primary school pupils’ levels of proficiency in the language. The tests can establish pupils’ specific strengths and weaknesses to guide individualized instruction. The project is ongoing, seeking sources of challenges for pupils in reading, writing, speaking, listening and language structures (grammar) and development of suitable intervention and enrichment models. The project is carried out with pupils in transitional grades in the primary school, which are grades 3 and 6 to facilitate effective access to the curriculum using English as the medium and prepare pupils for a smooth transition into secondary school where the demand for proficiency in English is even higher.

CONTRIBUTION TO WEALTH CREATION
The CELTUZ–Primary contributes to the development of human resources for the nation. Considering that English is an official language in Zimbabwe, the medium of instruction in schools and is used widely in the global village, it is important to produce individuals who are proficient in the language as it facilitates academic and professional development, business transactions at all levels and social integration. A workforce and populace that can communicate well in the language are functionally empowered to spur socio-economic and political development. Effective human resources are thus, effective wealth creators.

TITLE OF PROJECT
Children in Cultural Context: Regional Institute of Childhood Development.

RESEARCHERS
R Moyana, C Dyanda, A. Kuyayama, M. Dozva, J. Tafirenyika, M Mushowe, Mhizha

MAJOR PARTNERS
1. Department of Teacher education
2. Primary Teachers’ Colleges
3. VVOB
4. The Faculty of Law.
5. Department of Psychology

PROJECT DESCRIPTION
The University of Zimbabwe has approved the setting up of a Regional Institute of Child Development whose mandate is to do research on child development issues with specific reference to Zimbabwean children. Specifically, this institute will collaborate with institutions that deal with child development issues from a multi-sectoral approach. Chief among these investigations is the search for children’s developmental milestones, child rearing practices, laws and practices governing children to name a few.

CONTRIBUTION TO WEALTH CREATION
Development steeped in indigenous knowledge systems is the foundation for sustained wealth creation irrespective of sector, because it is often sensitive to the needs of the local environment. In this Institute, children are the future for our economic sustainability, hence, we are investing in our future by setting up this unit.

TITLE OF PROJECT
Second Chance Education for the Children and Young People of Zimbabwe

RESEARCHERS/ TEAM MEMBERS

MAJOR PARTNER
World Education Incorporated (WEI) and GZI.

PROJECT DESCRIPTION
The project’s goal is to support the Ministry of Education, Sport, Arts and Culture by training teachers of out-of-school children through accelerated learning programmes for reintegration into the formal school system. The teachers are trained by the above members of the Adult Education Department in methodologies of Andragogy. Research is then done to determine the effectiveness of facilitators with and those without Andragogy methodologies. Research is also done on the challenges that these children face as they attempt to return to school.

CONTRIBUTION TO WEALTH CREATION
The project aims to enhance the Zimbabwean human resource. The more children and youth return to and complete school, the more of them will be empowered as they will be able to either find employment or create employment and be self-sufficient.