ISABELA STATE UNIVERSITY

"University for People and Nature"

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Research & Development Services

Manual of Operations

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FOREWORD

This Manual of Operation for Research and Development of ISU is based on the ISU Research & Development, Extension & Training (RDET) MANUAL approved by the University Board of Regents (BOR) on June 14, 2010 through Resolution No. 10, s. 2010. However, changes were made on the structure and contents of the document.

The first modification is the separation of Research and Development (R&D) and Extension and Training (E&T) which are combined in the RDET Manual. These two are treated as one integrated RDET continuum in the BOR-approved Manual. The separation is, on the one hand, in compliance with the requirements of ISO certification, for the reason that, indeed, R&D and E&T are distinct separate functions of ISU and have their respective independent systems of operation. On the other hand, there is an increasing acceptance in ISU on the realization that R&D and E&T are playing separate significant roles in meeting and complying with national standards expected or required of ISU, as a Higher Education Institution (HEI), much more as a State University.

In the SUC-leveling mechanism implemented by Commission on Higher Education (CHED) for State Universities and Colleges (SUCs), R&D and E&T are separate independent criteria in the evaluation of SUCs on what level it will be categorized. The category or level determines the SUC budget, the privileges it is entitled to, and the benefits it can derive from CHED and the Department of Budget and Management (DBM). R&D and E&T contributed significantly to the present level of ISU as Level IV SUC.

Likewise, R&D and E&T are separate and independent criteria of evaluation in the Performance Based Bonus (PBB) implemented by the DBM for all government agencies. Moreover, they (R&D and E&T) are distinct and autonomous bases in the Normative Funding/Financing scheme followed by the DBM and CHED for the allocation of budget for SUCs in the annual General Appropriations Act (GAA).

For this Manual of Operations, aspects of the RDET Manual pertaining to R&D were culled out, edited and composed into one document. However, some aspects were modified and new ones were included because of new developments in RDET since 2012, under the new University leadership.

The University President issued a Special Order (SO) in November 2012 creating seven R&D Clusters along Priority Thematic Thrusts and identified Professor-Scientists to lead in R&D undertakings along these thrusts. Likewise, a Strategic Plan for R&D was crafted, finalized and packaged as an output of a 14-day three-part (3-months) series of seminar-workshop participated by the Vice President for RDET and the University Director for KTM. This was conducted for all SUCs nationwide by CHED and the Development Academy of the Philippines (DAP). These ushered in revisions in the R&D vision, mission, goals, strategies, and research agenda of the University. Also, the ISU Board of Regents (BOR) recently (September 2014) approved a new set of institutional and financial incentives for University researchers who have published research outputs in recognized publications/have

registered inventions, and other research-related outputs. All of these new developments were incorporated and made part and parcel of this R&D Manual of Operations.

This Manual was based on existing policies of the University and is the product of the concerted efforts of the R&D personnel of the University. The help of the University Director for Knowledge and Technology Management Dr. Dante M. Aquino, University Director for Research and Development Dr. Orlando F. Balderama, and the inputs from the Cluster R & D Directors and Campus R & D Coordinators are highly appreciated. Dr. Edmundo C. Gumpal is likewise acknowledge for his initiative for the 2010 ISU R&D, E&T Manual which was used as basis for this manual.

May this Manual of Operations for Research and Development serve as guide for the pursuit of excellence in Research and Development in ISU.

WILLIAM C. MEDRANO, Ph.D.
University Vice President
Research & Development,
Extension & Training

MESSAGE

The hallmark of a university is its ability to create new knowledge and technologies and serves as the venue for intellectual discourse all aimed to providing solutions to the problems of society. Moreover, the highest typology of higher education institutions is the recognition of being a research university by peers, by accrediting bodies and the international scientific community. Hence, these realities put research undertakings at the topmost importance among the functions and agenda of the Isabela State University.

The ASEAN 2015 Community compels the SUCs to gear up to a higher level of productivity in research to be at par with other leading universities in the Region, by focusing on scientific innovation and knowledge creation. This is urgently necessary to be able to establish, effectively link and integrate with peers and institution within the ASEAN region and achieve a mutual relationship and respect with each other.

This Research and Development Manual of Operations - in support for and in tandem with the other University manuals - will definitely be an instrument that will contribute towards the attainment of the University Vision, Mission and Goals.

I commend Dr. William C. Medrano, the Vice President for Research & Development, Extension and Training together with Dr. Dante M. Aquino, University Director for Knowledge Technology Management and Dr. Orlando F. Balderama, the University Research Director and all the men and women of the University Research Services who have exerted their precious time and talent in the revision of this R&D Manual of Operations for its continuous improvement and effective utilization.

ALETH M. MAMAUAG, Ph.D.
University President

Section I

BACKGROUND INFORMATION

The development of the Isabela State University over the years took various transformations. Starting as a Farm School established by American Supervising Teacher Horatio Smith in December 1918, it changed name and transferred location. From a Farm School it was converted into a Rural High School in 1928, transferred to Jones and reverted back as a Farm School in 1935, relocated back to Echague and named Isabela Agricultural High School in 1946, renamed Echague Rural High School in 1952.

As a course in forestry was integrated into the agricultural courses in 1960, it was appropriately renamed as Echague Agricultural and Forestry School (EAFS). Earning the status as an agricultural school in the region in 1963, improvements in the school came as additional academic programs were offered in support to the reorganization of the then newly created Bureau of Vocational Education (BVE). This development paved the way for the designation of the school as the Manpower Training Center for the region in 1970.

House Bill 2866 in the Seventh Congress of the Philippines further elevated the status of the school. The conversion of EAFS into a state college was initiated when the bill was approved by the Lower House on April 17, 1972 and was subsequently passed by the Senate on May 30, 1972. The bill was signed into law converting the school into the Isabela State College of Agriculture (ISCA). With this new status, the academic programs in agriculture, forestry and home economics were expanded as agricultural engineering, agri-business, and post-secondary courses were opened.

The promulgation of the Educational Decree on September 20, 1972 set another direction with the adoption of a government policy to re-orient the educational system for an accelerated national economic growth and social development.

As the need to enhance national development through education was realized, the need for a state university in the province was deemed necessary. Thus, in 1978, Presidential Decree 1434 merged two state colleges in the province, the ISCA at Echague and the Cagayan Valley Institute of Technology (CVIT) at Cabagan into the Isabela State University (ISU). The merger also transferred the college level courses of the Isabela School of Arts and Trades (ISAT) in Ilagan, the Jones Rural School (JRS) in Jones, the Roxas Memorial Agricultural and Industrial School (RMAIS) in Roxas and the San Mateo Vocational and Industrial School (SMVIS) in San Mateo to the ISU.

In 1999, the Commission of Higher Education (CHED) Memorandum Order No. 18, series of 1999 was enacted thereby providing the guidelines for the integration of CHED supervised institutions

(CSIs) to state universities and colleges. Pursuant to the order, the first CSI that was integrated into the University was the Cauayan Polytechnic College (CPC) in Cauayan, Isabela. Subsequently, in year 2002, three other CSIs in the province were also integrated into the system. These were the Delfin Albano Memorial Institute of Agriculture and Technology (DAMIAT) in San Mariano, Isabela and the Angadanan Agro-Industrial College (AAIC) in Angadanan, Isabela. At present, ISU has nine campuses with extension of selected academic programs in the Municipality of Palanan in 2005 and Santiago City in 2008.

More than 30 years after its establishment, the University has become a credible institution of learning and assumed leadership roles in R&D not only in Region 02 but also in the country. As early as 1978, it was identified as the regional center by the DOST-PCARRD with the establishment of the Cagayan Valley Agricultural and Resources Research and Development (CVARRD) consortium with the ISU Echague Campus as the Consortium base. With the advent of environmentalism in the 1980s, the College of Forestry in the Cabagan Campus of the University collaborated with Leiden University in the Netherlands in establishing the Cagayan Valley Programme on Environment and Development (CVPED) in 1989. The programme provided impetus to the University to branch out into other fields such as environmental science.

In recognition of its leadership in research, was designated by the Commission of Higher Education as its Zonal Research Center (ZRC) for Region 02 from July 2008 to December 2011. Changing focus on research management, ISU was again designated by CHED as Higher Education Regional Research Center (HERRC) since January 2012. It was also identified as the National University Center of Agriculture (NUCA) in 2012. The University has established and institutionalized through Board of Regenst approval the following development centers; Cagayan Valley Small Ruminant Center, Cacao Regional Development Center, Climate Change Center, Affiliated Renewable Energy Center, Regional Dairy Center and Equipment Manufacturing Center, and the Cagayan Valley Program on Environment and Development (institutionalized in 2010).

With its educational leadership and pioneering roles in research & development, along with the strategic location of its satellite campuses, the University has been achieving its vision, mission, goals and objectives. Today, ISU stands as a credible partner of development in the country and with the dedicated commitment of its faculty, support staff, students and the people behind its success, the University is focused to grow to even greater heights in the future, with the support of sustained relevant and progressive R&D.

Section II

UNIVERSITY VISION, MISSION AND CORE VALUES, R&D GOALS, OBJECTIVES AND STRATEGIES

The University derived its original mandate or mission from Presidential Decree 1434 as repealed by RA 8292. The first directs the University to provide advanced instruction in agriculture, natural and applied sciences and technology. It trains professionals in various fields such as in education, communication, business and entrepreneurship, among other fields.

The University is also tasked to engage in research to generate new knowledge, seek new technologies and promote sustainable development. The University is also mandated to translate these outputs to improve community life through extension services and to increase the productivity of the rural poor so that they can become self-reliant and active partners in regional and national development.

A. University Vision, Mission, Core Values and R&D Goal

The University's vision is: *The Isabela State University as a leading, vibrant, comprehensive and research university in the country and the ASEAN region. Towards this vision, the University's mission is: The Isabela State University is committed to develop highly trained and globally competent professionals; generate innovative and cutting-edge knowledge and technologies for people empowerment and sustainable development; engage in viable resource generation programs; and maintain and enhance stronger partnerships under good governance to advance the interests of national and international communities*. In the quest of its vision and mission, eight core values guide the University: excellence, innovation, collaboration, integrity, efficiency, accountability, environmentalism, and public engagement.

In order to contribute towards the attainment of the University vision and mission, as guided by its core values, University R&D has adopted the strategic goal: Strengthen research culture, excellence and leadership for academic advancement and sustainable countryside development. It is towards this goal that innovative leading research initiatives shall be pursued by the University guided by an R&D Strategic Plan and through the implementation of an R&D Manual of Operations.

B. R&D Objectives and Strategies

Research and Development shall be pursued by the University with clear key objectives that will be pursued through specific strategies. The five objectives, with their corresponding strategies are as follows:

1. To generate new knowledge and technologies for poverty reduction and sustainable resource management and academic advancement

    a. Continuous joint planning / packaging and implementation of relevant R&D projects / programs with stakeholders,

    b. Creation of innovation R&D clusters, and

    c. Develop R&D programs/centers, experts' pool and relevant research agenda.

2. To improve policy and administrative support (incl. Incentives and Awards)

    a. Institutionalization of policies (i.e. incentives and awards) through BOR approval, and

    b. Sustained implementation of automatic allocation of at least 10% of income for research

3. To intensify and institutionalize resource allocation, generation and sharing

    a. Establish/forge strong linkages and networks with national and international funding institutions and donors, and

    b. Formulation and implementation of a resource generation roadmap for R&D.

4. To manage, present, publish and protect research outputs

    a. Develop a sustained capacity building program for refereed journal publication and IPR,

    b. Provide support for presentation to scientific international conferences,

    c. Publish an institutional/ university journal recognized as internationally peer-reviewed and publication in internationally indexed refereed journals, and

    d. Promote IPR and patent registration of research outputs.

5. Strengthen research culture, excellence and leadership for academic advancement and sustainable countryside development

    a. Follow the R&D Strategic Plan as a strict guide in pursuing research initiatives,

    b. Implement this R&D Manual of Operations for all research-related undertakings of the University, and

c. Closely link with Instruction, Extension and Administration services of the University for the facilitative and optimum involvement of all University constituents for synchronized efforts towards the attainment of Vision and Mission of the University.

C. The R&D Manual of Operations

Although mostly based on *ISU Research and Development, Extension and Training Manual* approved by the University Board of Regents (BOR) on June 14, 2010 through Resolution No. 10, s. 2010, this **Research and Development Manual of Operations** of the Isabela State University has some features that are expanded and new. However, since there is an independent Manual of Operations prepared for Extension and Training (E&T), aspects of that approved RDET Organizational Structure and Operations Manual related to Extension are not included herein. The two Units (Special Projects Unit and MIS & M&E Unit) directly under the VP RDET Office are likewise not elaborated in this R&D Manual of Operations.

Section III

ORGANIZATIONAL STRUCTURE FOR RESEARCH SERVICES

The organizational structure of the University R & D Services is presented in Figure 1. The structure reflects how work is divided among officials and managers and how positions and offices or units are delineated and related to one another. The relationship and work assignments of the various stakeholders are briefly described hereunder.

A. Board of Regents

The Board of Regents (BOR), the policy-making body of the University, is the highest structure. The BOR decides the direction the University (including R&D) should take. The Board sets the policies, plans, major programs and projects, annual budgets, budgetary allocations and approves key R&D appointments and designations.

B. University Research and Development, Extension and Training (URDET) Council

With the Academic Council (ACO) and Administrative Council (ADCO) of the University, the URDET Council serves as the policy-determining body and clearing house of the University as far as Research and Development and Extension services, are concerned.

1. Functions of the URDET Council

a. To assist the President through the VP RDET in the formulation of University policies relative to knowledge and technology generation, R&D results utilization (KTM), policy research and advocacy, and governance and accountability;

b. To provide advice to R&D officials in the formulation of R&D framework, programs and projects, including the short listing of proposals for priority funding;

c. To assess, screen, monitor, and evaluate R&D proposals, on-going and completed R&D projects in the University; and

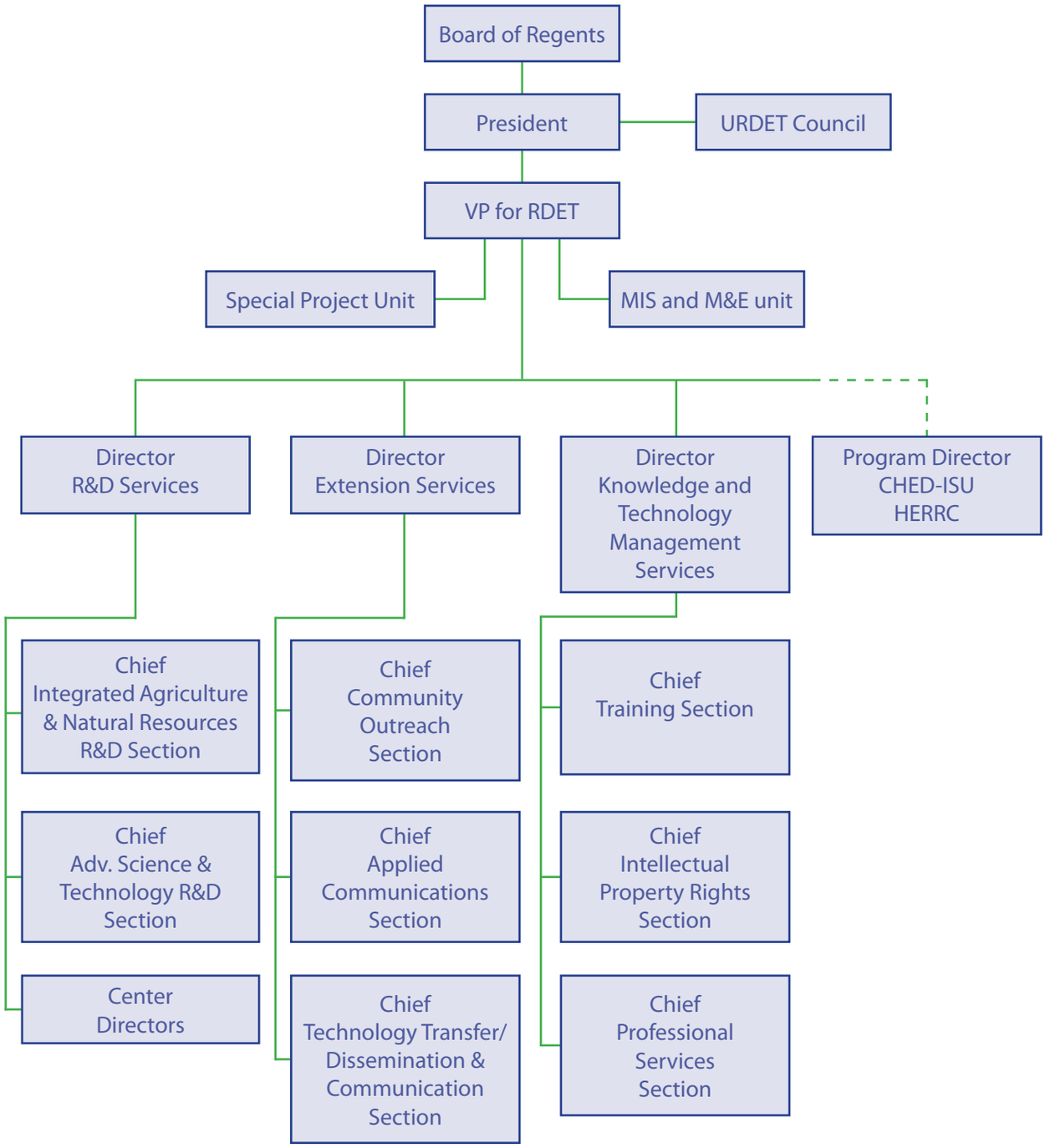


Figure 1. Organizational Structure of the University R & D Services

d. Monitor and Evaluate (M&E) University R&D projects.

2. Composition of the URDET Council

a. University President, as Chair;

b. University Vice President for RDET as Vice Chair;
c. University Vice President for Academic and Related Affairs, member;

d. University Vice President for Finance and Business Affairs, member;

e. University Director for Research Services;

f. University Director for Extension Services;

g. University Director for Knowledge and Technology Management Services;

h. University Director for Planning and Development, member;

i. Cluster Executive Officers, members;

j. Campus Administrators, members; and

k. Chairs, University Priority Thematic Thrusts R&D Clusters, members.

The University RDET Council shall be backstopped by a Technical Working Group (TWG) to formulate and recommend guidelines and policies to the Council relative to the overall RDET projects. The TWG shall be composed of the following:

a. University Vice President for RDET as Chair;

b. University R&D Director as Vice Chair;

c. University E&T Director, member

d. University KTM Director, member

e. Campus RDET Coordinators, members; and

f. Cluster RDET Chairpersons, members.

In the Cluster/Campus level, a Cluster/Campus RDET Committee shall be organized and shall be composed of the following:

a. Cluster Executive Officer/Campus Administrator, Chair;

b. Cluster/Campus R&D Coordinator, Vice Chair;

c. Cluster/Campus E&T Coordinator, member

d. Campus KTM Coordinator, member

e. University Priority Thematic Thrusts R&D Clusters chair/member on campus, member(s)

C. University President

The President is the Chief Executive Officer of the University system whose powers and duties are specified in P.D. 1434 and 1437 as amended by RA 8292. The President is supported in the structure by the URDET Council. The overall R&D Program is headed by the President who executes University R&D policies and guidelines approved by the BOR.

D. Vice President for Research & Development, Extension & Training (RDET)

The second Executive Officer is the Vice President for RDET who is under the direct supervision of the University President. The VP for RDET directly supervises the University Directors for Research & Development (R&D), Knowledge and Technology Management (KTM) and Extension and Training (ET). He is in-charge with the overall management and supervision of Research and Extension operations. He manages the RDET resources for an effective and efficient execution of R&D and Extension services in the university. More specifically, he shall perform the following duties and responsibilities:

- Provide leadership in the development of a university system RDET framework for effective planning and implementation of a comprehensive R&D and Extension and Training plans and programs;
- Develop and implement university-wide effective monitoring and evaluation of R&D and Extension programs and activities to determine overall performance;
- Spearhead in policy formulation needed to strengthen R&D and Extension capability and provision of a healthy and conducive environment for research and extension faculty and staff;
- Establish long-term mutually enriching RDET linkages and partnerships between the University and other academic or research institutions both local and foreign;
- Spearhead an aggressive resource generation and mobilization to support more R&D and Extension programs, human resource development, infrastructure and facilities development and acquisition of scientific information/literature materials;
- Implement a comprehensive capacity building program to enhance research culture and productivity among university faculty and students;

- Develop and implement an innovative approaches to improve governance thereby increasing overall performance of the University RDET system;

The following Units or Centers are directly under or attached to the Office of the VP for RDET:

- Research and Development (R&D) Services;
- Extension and Training (E&T) Services;
- Knowledge and Technology Management (KTM) Services;
- ISU-CHED Higher Education Regional Research Center (HERRC), affiliate
- RDET Management Information System (MIS) and Monitoring and Evaluation (M&E) Unit; and
- Special Projects Unit.

With an Extension Manual separately prepared, aspects of the RDET Organizational Structure related to Extension are not included herein. The two Units (Special Projects Unit and MIS & M&E Unit) directly under the VP RDET Office are likewise not elaborated in this RESEARH MANUAL.

1. Research and Development (R&D) Services

The R&D Services is headed by the University Director for R&D who shall extend full assistance to the VP for RDET in the direct management and supervision of University R&D operations. The R&D Services is composed of the Integrated Agriculture and Natural Resources R&D and the Advanced Science and Technology R&D units; the various Research Centers are also under R&D Services. Its functions include:

a. Formulate and recommend a well-organized and directed program of the university R&D;

b. Provide leadership and direction in the development, evaluation, and institutional-level management of the Department of Research;

c. Spearhead the development of policies relating to the conduct of research and research enhancement program;

d. Prepare and administer the budget for the Department of Research;

e. Make recommendations on all personnel actions within the Department of Research;

f. Review and provide signature approval of all proposals for external funding routed through the Department of Research;

g. Coordinate with other university programs and/or related agencies for program/agency complementation and efficient maximization of resources; and

h. Perform other related tasks as directed.

2. Knowledge and Technology Management (KTM) Services

The KTM Services is headed by the University Director for Knowledge and Technology Management who shall support and full assistance to the VP for RDET in the management of intellctual property rights and scientific publications of the university and its constituents. KTM Services is composed of the following sections: (a) Intellectual Property Rights Management Section; (b) R&D Publications; and (c) Professional Services. Its functions are described as follows:

a. Formulate and recommend policies on knowledge and technology management for implementation by the University;

b. Maintain and co-manage a University facility (center) to serve as venue for R&D results utilization (community training and education) and related activities;

c. Collect, store, and disseminate knowledge to help the University reduce duplication and ultimately produce more innovative products and services that meet the needs of university clients;

d. Archive best practices and lessons learned and to make better use of information stored in databases;

e. Identify technologies generated, inventions and softwares developed ready for copyright/patents;

f. Ensure that technologies generated, inventions, and softwares developed by the university scientists/researchers are given copyrights or patents;

g. Spearhead the conduct of trainings/workshops that will contribute to the resource generation program of the university;

h. Lead university personnel in offering of technical assistance to other government agencies, POs, NGOs, private organizations, or individual clients;

i. Establish (in coordination with the Business Affairs Office) a compensation package for the university personnel involved in professional services/technical assistance;

j. Perform other related tasks as directed.

3. Campus Director of Research & Development

The Campus R&D Director is responsible for the direct supervision and management of R&D activities at the campus level. He reports directly to the University Director for R&D. He closely coordinates with Deans of Colleges where most of the faculty researchers are based.

4. CHED–ISU Higher Education Regional Research Center (HERRC)

Although not an organic part of the University, the CHED-ISU Higher Education Regional Research Center (HERRC) headed by a Program Director designated by the CHED Chairperson, is attached to the Office of the VP for RDET. The Center has the following functions:

a. Overall planning, formulation of implementation of the HERRC research program;

b. Monitoring the implementation of the CHED funded researches under the HERRC program to ensure that procedures, resources and timetable are observed based on approved MOA;

c. Submit periodic reports on accomplishments under the HERRC program;

d. Attend and represent ISU in meetings and networking activities of HERRC; and

e. Participate in HERRC collaborative initiatives.

5. R&D Management Information System and Monitoring and Evaluation Unit

Directly under the Office of the Vice President, this unit serves as the University repository of data related to RDET activities. Its functions are the following:

a. Provide processed information that are useful in the rational planning and decision-making for RDET management and operations;

b. Plan, develop and maintain RDET information system for the University;

c. Train MIS members in campuses on electronic data processing and maintenance of Information Technology (IT) facilities and equipment;

d. Monitor RDET programs/projects/resources (proposed, on-going, and completed researches; abstract bibliographies of completed researches; technologies generated, validated, verified, pilot tested and commercialized; and manpower, equipment and infrastructure).

Through its computer-based monitoring system, the unit shall quickly provide data/information to various clients such as research managers, planners, evaluators, researchers, extension workers, faculty members, students, support staff, farmers and fisherfolks, among others.

6. Special Program/Projects Unit

Directly under the Office of the VP for RDET, the functions of the Special Program/Project Unit are as follows:

a. Provide technical and discipline-based support services to help the VP for RDET in linking the RDET Department with the research and development, extension and training departments of partner institutions or other agencies;

b. Facilitate the packaging of RDET program/project proposals and feasibility studies for submission to prospective local and foreign funding agencies;

c. Create more innovative, effective and efficient operational processes in integrating the RDET activities of various campuses of the University; and

d. Perform other functions as may be called for by the VP for RDET or higher University officials.

7. Research Centers

Research Centers are organized in the university to pursue R&D focused on specific commodities & fields of specialization.

The Centers shall propose R&D projects/studies in-line with R&D priority thrusts of the University for funding; implement approved R&D projects/studies; and, present the progress reports of their on-going R&D projects/studies during agency in-house reviews (AIRHs) and the terminal reports of their completed R&D projects/studies.

a. Cagayan Valley Agriculture, Aquatics and Natural Resources Research and Development (CVARRD) Consortium
CVARRD caters the delivery of research and development management in the agriculture, aquatic and natural resources in the valley, among which include:

- R&D Management
- R&D Results Utilization
- S&T Policy Advocacy
- Capability Building Activities

b. Cagayan Valley Small Ruminants Research Center (CVSRRC)
The Center caters to an array of research, development and extension activities focused on improving goat production, processing and allied services:

- Artificial Insemination Center
- Artificial Insemination Delivery System
- Canned and Vacuum-packed Chevon and Mutton Products

c. Affiliated Renewable Energy Center (AREC)

An offshoot of a DOE-assisted project, AREC was conceptualized to provide renewable energy resource options for far-flung communities such as:

- Micro-hydroelectric system
- Solar energy

d. Equipment Manufacturing Center (EMC)
EMC is a DOST-assisted Center focused on the fabrication, modeling and production of low-cost, custom-made agro-industrial machineries. It consists of various equipment manufacturing companies in the valley among its members.

e. Cacao Research and Development Center (CRDC)
CRDC birthed from the DA-BAR-funded project on Cacao in the valley as spearheaded by ISU. It is dedicated in the research, development, and extension of generated cacao information and technologies.

f. Climate Change Center–Education, Research and Development (CCC-ERD)
The Center is a CHED-assisted program which spells ISU's contribution towards generating climate change mitigation and adaptation strategies. It provides the mechanism to integrate climate change in research, development and education thrusts of the communities, such as:

- Climate-change resilient agriculture
- Riverbasin and Watershed Master Planning
- Upland and Aerobic Rice
- Dryland Agriculture

g. Rootcrops Research and Development Center (RRDC)
The RRDC emphasized the conduct of field trials and demonstration farms of root crops in the valley as prime and potent source of staple cash crops.

h. Regional Geographic Information Network (RGIN)
Recognized as a prime partner in GIS utilization, NEDA-R02 established the RGIN at ISU to become the hub of GIS training, utilization, and advancement. Through the RGIN, GIS had become an organic component of ISU's R&D activities.

i. Regional Dairy Center
Newly established in 2013 in partnership with the Philippine Carabao Center, the Regional Dairy Center is committed to the advancement of dairy production, processing and marketing in the valley.

j. Biotech Information Center (BIC)
The BIC-Cagayan Valley has been established as a repository of information materials on

biotechnology for various sources, such as updated news, information events, articles and press releases, workshops and meetings.

k. Cagayan Valley Program on Environment and Development (CVPED)
Institutionalized in 2010, the Center hosts scientists and graduate students by providing facilities (equipment, office space and accomodation) in conducting research in environmental science, providing environmental information to the public, as well as providing training facilities and professional services to the interested clientele.

Section IV

RESEARCH THRUSTS AND STRATEGIES

Consistent with the ASEAN 2015, Millennium Development Goals (MDG), national and regional S&T goals, and challenges particularly on poverty alleviation and food security, cutting edge science, natural resources management and sustainable development, the R&D thrusts of the University are anchored on key banner programs:

- Knowledge and Technology Generation;
- Knowledge and Technology Management (KTM) or R&D utilization;
- Policy Research and Advocacy; and
- Capability Building and Governance.

A. Knowledge and Technology Generation

The University as a Higher Education Institution is supposed to be the generator of knowledge and technology. Towards this end, it shall pursue this based on the following R&D thrusts and strategies.

1. R&D Thrusts

For the generation of new knowledge and technology, the R&D thrusts of the University are geared towards the conduct of basic, strategic, applied, technology development, technology adaptation and integration, social science and higher education research.

- Basic research is either experimental or theoretical work undertaken to acquire new knowledge of the underlying foundations or phenomena and observable facts without any particular or specific application or use in mind.
- Strategic research is a research undertaking that links basic research and applied research.
- Applied research is an investigation done to acquire new information directed towards a specific aim or objective. It is drawn on existing knowledge gained from previous

researches and practical experiences that is directed to producing new materials, products, devices, processes, systems and services thereby improving substantially those already produced or installed.

- Technology development or invention is a research undertaking that put together bits and pieces of information to produce something tangible and useful.

- Technology adaptation and integration is research that fine tunes the technology developed to adjust to the environment and fit into end-users' practices.

- Social science and higher education are integrative studies in linguistics, sociology, anthropology, arts and humanities which are directed towards policy development on governance and management of higher education and directed to install new processes, systems and services to improve instruction.

Based on stage of the development continuum, other research typologies are used in referring to research.

- Upstream research consists of basic research conducted to generate new knowledge of the underlying foundations or phenomena and observable facts without any particular or specific application or use.

- Midstream research consists of applied research organized and undertaken to acquire new information directed towards a specific aim or objective. It is usually drawn on existing knowledge gained from previous researches and/or practical experiences which are directed to producing new materials, products, devices, processes, systems and services thereby improving substantially those already produced or installed.

- Downstream research consists of a limited research work dwelling on the verification of the adaptability of technologies under different local conditions.

2. R&D Strategies

In the pursuit of the above thrusts, the following strategies are to be employed by the University:

a. Strengthening research management through improved coordination in planning and programming of research activities involving key stakeholders particularly the faculty and staff, students, industry, manufacturing, and other academic and research institutions.

b. Improvement of resource sharing and utilization among linkage research institutions, cluster campuses, colleges and academic departments.

c. Enhancement of resource generation activities in support to research projects and activities, human resources development and improvement of research facilities.

d. Strengthen research activities through increased research programs and projects to be packaged, endorsed for approval, and for implementation.

e. Strengthen the formulation of R&D policies sustaining the research allocation of 10 percent to 20 percent from the supplemental budget for research and providing mechanisms for their effective and efficient utilization.

f. Cultivate distinguished multidisciplinary research fields and pursuing research excellence by building a quality research environment and a dynamic research community through the provision of sustainable financial support

g. Encourage international research cooperation through the formation of alliances with locally and internationally known research centers and building mechanisms for cooperation or scholarship exchange programs with them.

h. Encourage industry-university partnership by fostering research cooperation through sharing of science-based knowledge systems.

i. Explore new strategies in research management along monitoring and evaluation (M&E), fund and resource generation, institutionalization of RMIS through enhanced ICT and IEC, and formulation of R&D management priorities through complementation, integration and resource sharing.

B. Knowledge and Technology Management (KTM; or R&D Utilization)

To fully benefit from the knowledge and technology generated from R&D, the University shall adopt a KTM system by implementing specific thrusts and strategies.

- Knowledge management includes acquisition, creation, dissemination and application of knowledge, and the adoption of insights and sharing of research results and approaches, best practices and success stories.

- Technology management includes technology adaptation and integration; technology validation; technology piloting; technology promotion, transfer, and commercialization; and provision for the information and technology needs of clients.

Very essential to KTM is that the knowledge or technology to be managed must have passed critical verification and validation. It should have undergone the rigorous peer review process by the scientific community through its (knowledge or technology) publication in an international peer reviewed journal. It is only after such a publication before it may be considered an established knowledge or a mature technology that is ripe for KTM.

1. Thrusts for R&D Utilization (KTM)

a. *Technology for adaptation and integration*. A technology is for adaptation and integration

if it satisfies the following criteria:

- Conducted in farmers' field and only a component of the technology is involved;
- Tested in technology generation research for at least one season;
- Technology shows good economic viability potential based on technology generation research; and
- Good potential for acceptance by farmers and commercial producers.

b. *Technology verification*. A technology is for verification if it can be incorporated in a package of technology that has potential for improving existing farmers' practices. Specifically, it should satisfy the following:

- It is an integrated technology conducted in farmers' fields;
- It has been tested for 2-3 seasons in the technology generation trials;
- It has shown economic viability and technical feasibility in technology generation trials; and
- Its computed return based on technology generation trials is better than that of farmers' practices.

c. *Technology piloting*. Technology piloting, also referred to as action projects, is an innovative work undertaken to:

- To confirm and demonstrate the feasibility of actually applying a technology using the community-based approach; and
- To gauge end user's reaction to introduction of improved technologies and identifying potential problems related to its wider dissemination, utilization and adoption so that these can be fed back to researchers.

d. *Technology packaging*. This involves the production of material technologies (seeds, breeds, tools, equipment) and the training of farmers and extension agents.

e. *Technology commercialization*. Commercialization is an activity involving the application of technologies on a commercial scale by identified entrepreneurs or used primarily to increase one's income or profits and productivity in a much wider scale.

2. Strategies for KTM (R&D Utilization)

a. Building on earlier successes KT generators (scientists and researchers) and KT adaptors through cooperative initiatives from as early as the planning stage of R&D agenda setting to the production KT phase;

b. Developing and harmonizing KTM policies among HEIs and R&D institutions, government agencies, private entrepreneurs and venture capitalists;

c. Developing University mechanisms for KT transfer by establishing KT ownership and upholding IPR protection for creative works of scientists;

d. Providing more resources for KT generation and transfer expenditures;

e. Providing more full-time R&D personnel;

f. Imposing strict IPR scheme to emphasize the importance of patent application and the protection of IPR assets for commercialization R&D results;

g. Packaging technologies for commercialization;

h. Cultivating innovative enterprises by developing product designs and brand names to enhance the added values of developed products; raising research standards cutting-edge science; and utilizing IPR and nurturing innovation and entrepreneurialism.

C. Policy Research and Advocacy

1. Thrusts

The thrusts and directions of the University along policy research and advocacy are the following:

a. Putting in place the enabling environment of R&D management;

b. Improving policy advocacy for S&T development;

c. Improving the wellbeing of the faculty, support staff, and students;

d. Pursuing environmental protection and sustainable development; and

e. Appropriately addressing global climate change issues.

2. Strategies

a. Formulating and facilitating approval of policies for implementation to improve enhance R&D operations;

b. Conduct policy related researchers (e.g. impact assessments);

c. Indorsing, advocating and supporting S&T policies;

d. Promoting renewable energy resources, conservation, and recycling systems;

e. Creating and promotion of green projects; and

f. Providing for sufficient funding to recruit specialized experts to participate in research projects, teach in specialized fields, or assist in R&D management.

D. Capability Building and Governance

1. Thrusts

a. Developing and further enhancing the R&D workforce; and

b. Cultivating distinguished fields and pursuing academic excellence.

2. Strategies

a. Effectively recruiting, tapping, and training faculty and R&D personnel;

b. Cultivating researchers and personnel services in the areas of interdisciplinary, multidisciplinary or trans-disciplinary systems R&D undertakings;

c. Strengthening research on higher education and social sciences to cultivate a science-literate academic community;

d. Cultivating the workforce needed by the industry by linking the concept of career development with industrial development;

e. Strengthening and promoting Industry-University R&D cooperation;

f. Cultivating distinguished fields and pursuing academic excellence;

g. Building a quality research environment by developing distinguished research fields and integrated research projects through the provision of long-term financial support;

h. Encouraging international research cooperation with international research centers, building scholarship exchange programs with foreign academic research institutions, and establishing agreements on bilateral S&T cooperation;

i. Cultivating S&T human resources through participation in international conferences, seminars and workshops, foreign research projects, post-doctoral programs in foreign countries; and

j. Recognizing the performance of scholars for their significant contributions in various fields by providing financial incentives.

Section V

RESEARCH SERVICES POLICIES AND GUIDELINES

A. General Policy Statement

In consonance with its mandate to perform the trifocal functions of instruction, research and extension, the University provides and adopts guiding principles and policy guidelines in the management for its R&D projects. These are geared for developing inquisitive and critical thinking among faculty, staff and students; generate knowledge and technology to advance the frontiers of knowledge, promote and facilitate the dissemination and utilization of research results.

B. Basic Concepts and Research Categories

1. Definition of Terms

The following terms are to be understood and interpreted as used in this research operation manual.

- Research is a systematic, objective, and critical investigation of available information directed at the search for new knowledge or its advancement including its practical applications.

- Development is a systematic work, drawing on existing knowledge gained from research and/or practical experience that is directed to producing new materials, products or devices, to installing new processes, systems and services, and to improving substantially those already produced or installed.

- Social science research is a research conducted to seek understanding of social behaviors and relationships of individual members in and to society and generally regarded as including researches in sociology, psychology, anthropology, economics, political science, history and related disciplines given their relevance for development.

- Education research refers to high quality research that nourishes the degree or level of teaching-learning in HEI environments. It is intended to generate new knowledge

needed to improve policies, including the implementation and administration of higher education institutions, for the advancement of higher education.

- Technical research, or generally referred to as commodity research, is conducted in the areas of agriculture, forestry, energy, environment, natural resources, engineering, cutting-edge fields and related disciplines intended to generate technologies to address the research priorities for prosperity, economic growth and development, and social well-being.

2. Categories of Research and Development

Researches in the University may be classified according to: (a) Purpose, (b) Who leads in the implementation, (c) Functional responsibilities in the research-extension continuum, and (d) Fund source. Each of these are described hereunder.

a. Broad Categories of Research According to Purpose

In general, research programs in the University consist of three broad categories as follows:

- Research that nourishes the quality of the teaching-learning environment
- Research that develops the inquisitive and critical thinking of students
- Research that transcends the boundaries of knowledge particularly in addressing the needs of target clientele

b. Categories of Research Depending on Who Takes the Lead in Implementation

- Faculty/staff research generally to enrich instruction
- Faculty/staff research to generate database for policy formulation, planning and programming of programs and projects, including technology development
- Student research to develop inquisitive and critical thinking

c. Research Classification according to Functional Responsibilities in the Research-Extension Continuum

- Basic research is an experimental or theoretical work undertaken to acquire new knowledge of the underlying foundations or phenomena and observable facts without any particular or specific application or use in mind.
- Applied research is an investigation undertaken in order to acquire new knowledge directed primarily toward a specific aim or objective.
- Development research is a systematic work, drawing on existing knowledge gained from research and/or practical experience that is directed to producing new materials

or devices, to installing new processes, system and services thereby improving substantially those already produced or installed.

- Pilot testing is an innovative work to confirm and demonstrate the feasibility of actually using a technology; gauging end-user's reaction to introduction of improved technologies and identifying potential problems related to wider dissemination, utilization and adoption so that these can be fed back to researchers.

- Technology promotion/commercialization is an activity involving application of technologies on a commercial scale by an identified entrepreneur or user primarily to increase income/profits and productivity.

d. Categories of Research according to Fund Source

By funding source, research support in the University may come from two sources:

1. **Internally funded researches**
   Internally funded researches are researches conducted with funding coming from ISU either through the General Appropriations Act (GAA or Fund 101), or from income (Fund 164).

2. **Externally funded researches**
   Externally funded researches are researches conducted through funding support from external sources (other than GAA and income such as PCARRD-DOST, DA-BAR, CHED, NEDA, etc.)

C. R&D Guiding Principles and Philosophy

Pursuant to the above mandate, the ISU R&D programs and projects have been guided by the following general principles:

1. **ISU as generator and source of scientific knowledge**
   The University R&D generates scientific knowledge in pursuit of academic excellence and addressing major socioeconomic problems of the country and the region. The University is a valued partner of various institutions, government agencies, NGOs, industry and other sectors of the community.

2. **Complementarity of research with instruction and extension**
   Research is a significant complementary function of the University with that of Instruction and Extension. The complementarity is underscored in the CHED SUC Leveling system and Normative Financing scheme as well as in the PBB mechanics implemented by the Department of Budget.

3. **Instruction-Research-Extension continuum**
   R&D is an essential component of the inseparable tri-functions of instruction, research and extension. The knowledge gained through R&D is imparted through instruction and applied through extension. Phenomena and occurrences in the process provide fertile grounds for

continuing research that will sustain the continuum and will foster the growth of scientific knowledge.

4. **Balanced and complementary R&D orientation**
   R&D gives importance to basic and applied researches along the identified University research agenda based on seven R&D Clusters on Priority Thematic Thrusts (Appendix 1) and on six Commodity-Based R&D Thrusts (Appendix 2) from which ISU became known and recognized as a research institution.

5. **Inter-, Multi-, and Trans-disciplinary research schemes**
   Tapping researchers for interdisciplinary, multidisciplinary, and transdiciplinary research projects are call of the day. Integration of various specializations in a research project is a University priority and preferred for financial support.

6. **Technology transfer and Intellectual Property Rights (IPR)**
   Institutional mechanisms for technology transfer of mature technologies developed by the University shall be promoted through the establishment of technology ownership and intellectual property right regimes for the protection of the creative works of scientists and researchers in the University.

7. **Participatory approaches in R&D management planning**
   Improved coordination in planning and programming of R&D activities involving all key stakeholders shall be pursued through cooperative research initiatives in all aspects of R&D.

8. **Impacts of research**
   Research should not only be conducted for the purpose of generating articles for publications (publish-or-perish research culture) but also for reaching the communities to make a difference in the lives of target beneficiaries.

9. **Gender sensitivity**
   Gender dimensions in all aspects of R&D projects shall be promoted and implemented.

10. **Research culture**
    Research shall be incorporated as a part and parcel of ISU's being. Research culture at ISU means that everyone from top management to the smallest components of the University are committed in doing and promoting research. Top management encourages the faculty and personnel to use the power of research for good practice and adopt research as a necessary component for decision making and planning.

11. **Research alliances, networking and resource generation**
    ISU encourages research cooperation with local and international research institutions through the formation of alliances, establishment of mechanisms for cooperation, scholarship exchange programs and establishing agreements on bilateral S&T cooperation and Industry-University partnership in R&D.

12. **Strong R&D quality management system**
    Strong University R&D governance supported by strong policy foundations and structures

are important to effectively and efficiently implement R&D programs and projects.

D. Priority Research Agenda

The University research priorities are specified in the University Research Agenda. The agenda were defined with due consideration of the strengths and weaknesses of various University components and the opportunities and threats from factors of the external environment.

The identification of the University research agenda was based on established commodity-based research thrusts from which ISU developed a name and became known in research. These commodity-based research thrust in 8 thematic thrusts include: (1) Precision (smart) agriculture: rice and corn, aerobic and upland rice, industrial crops (rubber, sugarcane, cacao), tropical fruits; (2) organic agriculture: banana, rice, corn, legumes (mungbean, peanut) and indigenous vegetables; root crops (cassava, sweet potato, yam); indigenous plants for health and wellness; native animals (chicken, pig); (1/2) Precision (smart) / organic agriculture: dryland crops (pigeon pea, peanut, sweet sorghum); small ruminants (goat, sheep); large ruminants (dairy cattle, carabao); (3) Fisheries / Aquaculture: Tilapia, hito, ulang; (4) Farm machineries, metal craft, electronics and semiconductors; (5) Watershed and biodiversity; (6) Higher education and social science; (7) Disaster risk reduction and management: hydro meteorological hazards in Cagayan river basin and island communities; climate change adaptation strategies; policies development strategies and institutions for CCA and DRRM; (8) Renewable energy: micro hydro, solar energy, biomass and biofuel. In addition, the University shall focus on seven research thematic thrusts based on international and national research trends. These thematic research thrusts include: (1) Smart/Precision Agriculture, (2) Organic Agriculture, (3) Renewable Energy and Biofuels, (4) Climate Change and Disaster Science, (5) Biodiversity and Environment, (6) Farm Mechanization, and (7) Socio-Economics and Higher Education (Appendix 1).

With these "commodity-based" research thrusts and the "thematic" research thrusts as simultaneous considerations for potential sources of potential researchable areas, and based on external environment (opportunities and threats) and internal (ISU's strengths and weaknesses), the University research agenda were generated. The five-year (2013–2018) ISU Research Agenda are shown in Appendix 2. The research agenda, with built-in dynamics of flexibility, shall be the guide in the formulation of research proposals and the basis of approving research support by the University. The University Research Agenda shall be periodically updated when new research directions and opportunities emerge.

[1] Based on these commodity-thrusts, some ISU faculty researchers, ISU with its research partners, or ISU as an HEI were recognized and given awards. Among these awards include: Hall of Fame DOST-PCARRD UGNAY Award (five times winner), CHED Best HEI Research Program, CHED Best HEI Extension Program, DA Gawad Saka Awards, CHED REPUBLICA (Outstanding Research & Publication) Award, and individual Best Paper awards in various national and international scientific conferences.

[2] The University President, through the recommendation of the Vice President of Research and Development, Extension and Training (RDET), issued Special Order No. 3, s. 2012 creating these seven R&D Clusters and assigned faculty researchers from different campuses as Chair and members of each cluster.

E. R&D Policies and Guidelines

1. Guidelines for Strategic Planning and Priority Setting of R&D Programs and Projects

ISU is a large but relatively young institution and as mentioned in this Manual, its research and extension thrusts and directions are geared towards nourishing degree level learning-teaching for the continued growth and development of higher education in all campuses of ISU while at the same time promote the frontiers of knowledge by seeking new technologies to improve community life in its various service areas.

Owing to the very limited financial resources of the University particularly for R&D and extension as compared to instruction, R&D programs and projects must be maintained more effectively and efficiently. If any of its R&D plans, programs and projects is to succeed, the various factors that will determine its intended outcomes must be thoroughly identified and established. And this calls for an objective planning and programming of its activities to minimize the occurrence of undesirable and unpredictable events that would likely derail program/project/activity implementation.

The planning process starts with the establishment of a framework that represents the many intricate relationships and sequences of events and activities discussed as follows:

a. The Planning Framework

1. Environmental scanning of the service area of the University

   Based on the established vision, mission, goals and objectives of the University as articulated and as understood by its various stakeholders to include the governing board, faculty and support staff, students, farmers and various other clientele in the industry and other sectors, the first and fundamental step in the planning process is the holistic scanning of the University's service areas.

   It is a known fact that the usual piecemeal research approach especially in the countryside often resulted in fragmented and in-appropriate technical solutions. It is in this regard that the power of the interdisciplinary, or multidisciplinary, or transdisciplinary research approaches shall be explored and implemented where several researchers should look at a common problem, adopt a common framework, and relate the findings of one discipline to the other. However, while the above approaches may be very relevant, it is advisable to concentrate more on determining the potentials of the service areas in terms of economic growth and development and how these growth and development objectives and processes can be interwoven into the major functions of the University particularly along the generation, advancement, dissemination and transfer of knowledge or technology, as desired.

   The environmental scanning processes and procedures will be done as follows:

- Reviewing the institutional research mandates of ISU and local development plans of the target municipalities;

- Gathering of data of the various sectors in the locality, including the industries, their products, marketing systems, other industry services and levels of competitiveness;

- Assessing the involvement of other development agencies in the development process and in the rural economy to complement intervention activities rather than duplicate them; and

- Determining possible researchable areas and other extension modalities that could be implemented through participatory planning processes involving experts from the various disciplines, those responsible in their implementation, the members of the Board of Regents, middle-level managers, faculty members and support staff, students and other stakeholders.

2. Matching of institutional strengths and resources with the economic potentials of the service areas

   From the results of the assessment activities, there is a need to match the University's strengths and resources, in terms of manpower capability - their knowledge, skills and entrepreneurial spirits and other support services, with the economic potentialities of the service area. Where the institutional strengths can not match up with the economic potentialities of the service area, the help of the national/ regional government will be sought.

3. Niching and clustering of R & D programs and projects

   With the very meager resources of the University, there is a need to develop R&D programs and projects that are focused on a limited number of niches with potential impacts. These niches, however, should be defined in terms of priority areas where the University has a comparative advantage over other research institutions. This is necessary in order not to spread thinly the meager resources of the University.

   Moreover, while faculty members of the University have their own research interests and disciplines, they must be able to work together by clustering their disciplines using interdisciplinary, multidisciplinary or transdisciplinary approaches to achieve even greater impacts.

4. Management of research and development centers

   Research Centers are usually long-term as compared to research programs which may have three to five years in time frame. The University has 17 research centers and few of these centers have barely scratched the surface of their contribution to the overall goals of the University.

Comparable with R & D programs, the R & D Centers shall be under the administrative jurisdiction of the various R & D Directors who shall be coordination of planning, funding, monitoring and evaluation of the centers. The centers shall operate with research or extension faculty/staff from various academic departments who shall be de-loaded from their teaching responsibilities so that important research and extension projects or studies can be implemented.

However, for centers that can attract considerable funding from government and external donors, they may be managed in a semi-autonomous manner when a relatively large academic faculty and staff from departments are involved through their appointments as affiliate staff of the centers.

No duplication of research staff and research facilities between research centers responsible for coordination of planning, funding, monitoring and evaluation of the centers. The centers shall operate with research or extension faculty/staff from various academic departments who shall be de-loaded from their teaching responsibilities so that important research and extension projects or studies can be implemented. Academic departments and other research units shall be maintained in order not to weaken programs on instruction by drawing away senior teaching staff from these academic departments.

5. Conformation of R & D programs and projects with the national, regional and institutional research agenda

   In its attempt to enhance research productivity in higher education, CHED has set the general policies, directions, initiatives and priority areas for research and research-related programs (NHERA-2 2009-2018). Since the research areas are products of experts from the various disciplines to include institutional leaders, senior researchers and representatives from funding institutions, the University RDET program and project should be anchored on these agenda in the planning process, to include site-specific research areas along key disciplines that provide solutions to institutional (teaching-learning environment) as well as local community problems.

6. Major steps in developing the R & D programs

   Research programs are generally considered as consisting of interrelated and complementary projects usually implemented using the multidisciplinary or transdisciplinary approach to meet established goals within specific time frames. They are usually broken down into projects that consist of interrelated studies also designed to meet predetermined objectives within a specific time frame. The major steps include:

   - **Identification of strong research leaders**
     The development of research programs in the University starts with the identification of research leaders with the necessary competencies in terms of

knowledge, skills, values and attitudes.

- **Creation of an Ad Hoc Committee**
  This will be followed by creating an Ad Hoc Committee preferably of five members from the various disciplines who shall craft the common research framework.

- **Appointment of experts to review and package proposal**
  Experts from the University Expert Pool shall then be sought to review the research program proposal after which the research program proposal shall be packaged first-class by providing all the needed information for donor support.

- **Invitation of prospective fund donors**
  Prospective donors shall then be invited for a visit and briefing about the program.

  The same process shall also be sought for sponsor-driven program proposals.

b. The R& D Planning Process

Through the inputs coming from the various R & D services, sections and colleges in campuses, the expected output in the planning process is the tentative Strategic R&D Plan which shall be prepared by the TWC of the URD Council and presented to the URD Council and key stakeholders. After incorporation of suggestions and corresponding revision by the TWC, the Plan will be presented to the Board of Regents for final approval and the same shall be multiplied and disseminated to all departments/units, colleges and campuses.

The R&D Strategic Plan shall then be translated into 5-Year Medium Term R & D Plans called Work Plans, specifying among other things, the sequence of R & D events to be pursued in the research-extension continuum. To ensure commitment and full support in implementing the Plans, it is important that all those who are directly and indirectly involved in the execution of the Plans, its programs and activities, to include the Heads of Departments, Directors of Research Centers/Units, Deans of Colleges, University R & D Director, Budget Officer, the collaborating institutions and possibly, donor agencies, should be present in crafting the 5 -Year Work Plans.

Once the Work Plans are crafted, they shall be presented to the Panel of Experts from the University in four areas:

- Panel of Experts in higher education to include Student Support Services to review the Work Plan for social science, education and student research cluster;

- Panel of Experts for technical research along agriculture, forestry, environment, engineering, health, information technology and related disciplines;

- Panel of Experts along knowledge and technology management and utilization; and

- Panel of Experts along technology dissemination, transfer and commercialization.

After presentation to the Panel of Experts at all levels and the necessary corrections and refinements were properly made, the same shall be finalized and presented to the Board of Regents for final approval.

c. Implementing the R & D Plans

The Strategic R & D Plan, the Medium-Term R & D Work Plan and the Annual R & D Action Plan shall be translated into Operational Action Plans in research units of departments and/or research centers. From this Operation Plan, an RDET Employee Work Plan shall be developed on a semestral basis divided into five months.

The Employee Work Plan will be the basis of monitoring and evaluation of the RDET employees in meeting the goals and objectives of the strategic plan, medium-term plan and action plan.

The progress in meeting the goals and objectives of the plans at various levels should be fed to the R& D Coordinators of constituent campuses and cluster campuses on a monthly basis and to the University R & D Directors on a semestral basis. Among other considerations, the monitoring and evaluation plan should be able to assess the inputs, activities and processes, outcomes, effects and possibly, initial impacts against the defined objectives.

2. Research Proposals

A Research Proposal is necessary before a research project (program, project, study) can be properly implemented. The detailed methodological rigor is what ensures that a research is scientifically conducted. Hence only researches that passed through the evaluation and screening process implemented by the University with the appropriately approved research proposal is recognized by the University. For the purpose, the proposal should follow a standard research proposal formats (e.g. the DOST councils, DA-BAR, CHED, or other research funding institutions). Full-blown research project proposals should have the following component parts:

- Program/Project Title
- Name & address of Proponents
- Implementing and cooperating agency/ies
- R&D station
- Site of implementation
- Classification of R&D

- Sector/Commodity
- Discipline
- Significance of the project
- Project objectives
- Review of literature
- Methodology
- Timetable of planned activities (Work Plan)
- Project duration
- Expected output
- Target beneficiaries
- Personnel requirement
- Literature cited
- Estimated budget
- Capsule curriculum vitae of proponent/s

a. Program/Project Title

The research program or project title introduces the project to the reader. It identifies the program and the project components and reflects the main purpose of the research. It gives the reader the idea on what the researcher proposes to do.

The goal in making the title is to describe the coverage of the research and reflect its contents. As such, it should be short, easy to remember, and can easily be indexed and retrieved. It must contain a few words that adequately describe the contents of the paper and it should clearly embody the focus of the proposal.

In developing the title, the proponent should make a listing of all the most important proposed findings or data to be generated, cluster them using one word if possible, and then compose them to form a clear and an eye-catching informative title. Avoid using unnecessary words such as: effects, evaluation, study, experiment, trials, observations, results, test, factors, analysis, etc. as read in many titles.

In agriculture, forestry, environment, natural resources and related research, the common

and scientific names (in italics) of relative uncommon crops or trees should be included in the title.

The length of the title should not exceed 12 words but a shorter title is better. Avoid using technical terminologies, acronyms, non-standard symbols and abbreviations.

Note that materials with confusing titles may lose the opportunity to be read by an unrelenting reader.

b. Name and Address of Proponent

This item consists of the name, designation, address, telephone and fax numbers, and email addresses of the proponent/s. The proponent is usually the designated project leader and is the one in-charge to take the lead in project implementation.

c. Implementing and Cooperating Agency/ies

In this item, the implementing and cooperating agency/ies should be indicated, identifying the lead and collaborating agencies. By lead agency, it means the agency which has the full authority over the execution or implementation of the research project. Cooperating agencies are agencies participating in the research or development work.

d. R&D Station

R&D Station refers to the research station or cluster/campus or unit where the R&D activity will actually be conducted.

e. Site of Implementation

Site of Implementation refers to the specific location where the R&D activity will be conducted. Generally, the municipality, district, province and region are indicated.

f. Classification of R&D

R&D classification refers to either the program or project is research or development. The research project may either be classified as basic research, applied research or development research.

g. Sector/Commodity

Sector/Commodity indicates whether the R&D activity is psychology, sociology, anthropology, economics, political science, crops, livestock, forestry, agricultural resources management or socio-economics; fisheries or aquatic resources; biotechnical, pharmaceutical or health services; biotechnology, information and communications technology, material science, photonics or space technology; industry, energy, utilities or infrastructure.

h. Discipline

By discipline, it refers to the specific field to be studied e.g., social science, education, plant breeding, taxonomy, communicable or degenerative diseases, drug formulation, maternal or child health, process, food and feed, metals and engineering, etc.

i. Significance of the Project

Significance of the project refers to the statement of the problem which should be discussed by giving information on what exactly is the problem, how long it has become a problem, the situation how the problem was encountered and the negative consequences of the problem if not acted upon.

Previous works or reviews relevant to the problem may also be cited in the significance of the project. If this is the case, the significance of the project should also include what the research is all about and what is its role in relation to other works and show how the research activity will extend over or supersede the results of earlier researches.

In most technical researches, the significance of the project tells something about the context of the project, that is, how the research project forms part of the overall body of knowledge in the discipline, sector or commodity.

In many development-oriented research projects, the significance of the project should also include the justification of the research expenditures vis-à-vis potential benefits to be derived, utilization of the expected results, outcomes or outputs, impact of the information or technology to be generated on the current body of knowledge and the target users/beneficiaries or stakeholders at the institutional, municipal, provincial, regional and national, if not global levels.

For R&D projects aligned with the mandates of DOST-PCARRD most particularly along the NSTA 2020, the DOST 8-Point Agenda, the Integrated S&T Agenda for the AFNR, and the NHERA of CHED, the research outputs should be explicitly stated and discussed specifically on how they will be utilized and disseminated.

j. Project Objectives

The project objectives state what the research project was expected to achieve and why it was to be undertaken. Many proponents suggest that the articulation of the objectives should use the SMART guide. By SMART, we refer to the proposed objectives to be Specific, Measurable, Attainable, Relevant and Time bound.

Where the research project have many related studies all of which lead to a common goal, it is preferable to have a general objective which is a statement of the general purpose of the research. The specific objectives are crafted from the general objective to address the problem areas as stated in the significance of the project.

The project objectives should be clear enough as to what the proposal intends to

accomplish or achieve and must be attainable within the timeframe and the required resources, not what he/she intends to do. They should be very simple, specific and narrow enough to permit objective measurement under reasonable conditions.

k. Review of Literature

In several research proposals, the Review of Literature has been considered by many evaluators as the "weakest link" in the development of proposals.

The Review of Literature briefly synthesizes past and current research findings and the recommendations on the problem being investigated. It generally presents and discusses what has been done about the problem. It also shows the State of the Art and knowledge about the subject of investigation to which the proposal is built on and will take off.

The literature reviews to be presented in the proposal should be within the last five to 10 years from which the project proposal will take off and be discussed.

The literature review in the proposal likewise ensures that there will be no duplication of research works and guarantees that all the researchable areas shall be covered.

Note that the Review of Literature is a series of references that will strengthen the position of the researcher in his/her research work. Hence, only those reviews that will substantially strengthen the research position of the researcher should be included in the review.

The following guidelines should be followed in organizing the Review of Literature:

- Make an outline of the topics to be presented;
- Classify the pertinent abstract of the reviewed literature into topics;
- Interrelate or group similar findings;
- Compare or contrast findings where appropriate;
- Use the Review of Literature to clarify, augment, support or contradict the idea;
- Present one idea per paragraph;
- Do not include a literature not relevant to the problem;
- Provide smooth transitions by using such words as "on the other hand", "nevertheless", "in addition", "in contrast", etc.;
- Avoid so many reviewed articles on the same subject;

- Limit and avoid complementary papers by the same author;
- Cite results but not tabulated data;
- State research findings in your own words;
- Cite word for word by enclosing them in quotation marks; and
- Acknowledge sources of sentences or sections lifted from text or articles, and other vividly striking expressions

I. Methodology

The Methodology generally describes the way the research work is carried out and what equipment and materials are to be used in the process. It is geared towards providing answers to the research questions as stated in the significance of the project and the objectives as set. The measurement of the expected outputs that the project will produce the set of indicators and expected values should also be included in the methodology.

As in many technical researches involving experiments, the methodology should show appropriate treatments used, the experimental layout, and appropriate statistical designs and analysis systems. Discussion on how the data shall be generated, how frequent the measurements should be taken and how the collected data will be processed and reported are also discussed in the methodology.

The research methodology generally includes four major components as follows:

- Theoretical/Conceptual Framework and logframes
- Sampling Procedure;
- Methods of Data Collection; and
- Methods of Data Analysis.

1. Theoretical/Conceptual Framework/Logframe

   The Theoretical Framework is a set of interrelated concepts that guides a researcher on the things that he/she wants to measure and the statistical relationships he/she is looking for.

   Generally used in social science R&D, the Conceptual Framework is equivalent to research design in the other sciences. It shows how the problem is viewed and how the proposed interventions will lead to the solutions of the problem under study. The Review of Literature should guide the researcher in contextualizing the problem and identifying the variables to be looked into.

Usually illustrated using a diagram and accompanied by a textual explanation, the framework contains both the dependent and independent variables and how these variables are related or interrelated. It guides the researcher on how to analyze the data and the methodology to be used. Note that not all projects need a Conceptual Framework.

The logframe is a tabular description of the logical sequence of events to implement the research project. Generally, it provides the general idea or overview of the entire elements of the project in terms of the goals, purposes, expected outputs and activities. Linked together in a logical sequence, these elements of the logframe are usually measured in terms of verifiable indicators, means of verifying them and important assumptions.

2. Sampling Procedure

Sampling consists of measuring portions of a population and from the measured sampling units, obtaining estimates that are considered representative of the parent population. While a complete enumeration is desirable, sampling is being done to save on time and resources.

One of the fundamental concepts in sampling that a researcher should consider is the sampling intensity which is the ratio of the sampling units for a given probability and allowable sampling error to the population or universe to which estimates are being obtained.

Depending on the degree of homogeneity or heterogeneity of the population and the degree of required accuracy, the sample size is determined using either simple random sampling, stratified random sampling or simply, systematic sampling. The researcher should be able to find the relative strengths of the most appropriate sampling techniques to be used in the research.

3. Methods of Data Collection

The Method of Data Collection provides answers to the nature and extent of data to be collected, how the researcher proposes to collect them and how the data should be processed to provide the necessary information for analysis.

Note that the information to be generated for analysis should be limited but large enough to enable the proponent to be confident that the data collected is trustworthy and serves the needs of the research. They may be obtained from primary or secondary sources by actually gathering them from the field in terms of experiments or through the use of personal interviews, interview schedules or questionnaires in case of social research.

4. Methods of Data Analysis

Data analysis is the process of transforming the collected data into useful information. Data analysis involves three major steps: data preparation, descriptive statistics and inferential statistics.

- Data preparation
  Data preparation involves the checking of the collected data for accuracy, data encoding or data entry into an appropriate computer, transforming the data into desired structure, and developing a database that integrates the various data into usable forms.

- Descriptive statistics
  Descriptive statistics refers to a description of the basic features of the data for the study. Describing what the data is all about, descriptive statistics generally provides simple summaries about the collected data and includes tables, graphs, charts, photographs, diagrams generally called figures. These figures are essential as they give a great deal of information more easily seen than text and therefore readily understandable by the reader especially when they are visually attractive. Diagrams show the most relevant or important information.

- Inferential statistics
  In many researches, the analysis extends beyond descriptive statistics especially when testing hypotheses or in modeling. Through inferential statistics, the researcher tries to infer from a given sample data what the population really is or make probability statements on the differences between groups as a dependable judgment or had simply happened by chance. Hence, inferential statistics is used to make inferences about the data to the general conditions and these are linked to specific research questions or hypotheses that were formulated in the significance of the project.

  It is important to present simple data in order not to confuse the readers and where conditions do not warrant, the details of the data may be provided in the appendices.

m. Timetable of planned activities

The timetable of planned activities is usually presented using a Gantt Chart illustrating the chronology of events or sequence of activities to be conducted. It generally provides answers on the expected time of completion of the activities as planned and the delivery of the desired outputs.

The various activities of the research should be properly planned in order not to delay completion. Following the plan is absolutely necessary but it should be flexible enough to allow for adjustments or revisions without substantially altering the delivery of outputs within the bounds of reasonable time.

n. Project duration

The project duration usually indicates the number of months or years the project shall be accomplished based on the timetable of the planned activities.

o. Expected output

The expected output indicates the specific products, processes or services, information or technologies which the project is expected to produce. Defined in terms of the social, economic and related measures, these outputs should be explicitly determined in terms of how they are being generated and realized through time.

In addition, the process on how the outputs should be promoted, utilized and commercialized should also be thoroughly explained in the expected output. The expected output statements in the proposal should be simple and measurable.

p. Target beneficiaries

The target beneficiaries of the project should be specified. They should be defined in terms of how the expected outcomes, effects and impacts of the project are being utilized.

q. Personnel requirement

By personnel requirement, we refer to the people or personnel who should be involved in the project. They should be knowledgeable and skillful enough to do the research work.

r. Literature Cited

The Literature Cited is actually a chronological list of reading materials referred to in the project. The list should include books, periodicals, research reports, theses or dissertations, proceedings, articles, or papers presented in various fora.
The purpose of citing the references is to allow the readers to follow through the research work and compare them to the conclusions that the researcher has drawn from the research. The references should never be thought of as a method for the readers to think that the researcher has read enough.

For books, the proponent should be able to give the name author/s, year, edition, publisher's name and location. For articles in journals, the proponent should be able to give the name of the authors, year, name of publication, volume and page numbers. Note that if the proponent can not possibly give these details, then probably, he does not have a proper reference. For web-based publications, the same basic principles should be applied as in citing printed works.

Note that literature citations in peer-reviewed journals are more convincing than non-reviewed materials. The use of pictures are acceptable, however, permission should be

sought from the author.

s. Estimated budget

The estimated budget is an estimate of the financial requirements in carrying out the objectives of the research. It should be reasonable enough and consistent with the work plan. The budget statements should be worked out in a manner that they should indicate the sources and the time they are available and they should be broken down according to the period of disbursements.

t. Capsule curriculum vitae of proponents

The curriculum vitae is a one page information sheet indicating among others the qualification and relevant experiences of the proponent/s in relation to the research work. It generally gives information on the nature of the researcher's specialization and his/her ability to conduct the project being proposed.

3. Evaluation, Screening and Approval of Proposals

For externally funded researches, each should have been properly endorsed by the University Administration and that a Memorandum of Understanding/Agreement shall be required specifying the responsibilities of ISU and its involved researchers as well as the funding agency.

For University funded researches, each should undergo and pass the evaluation and screening of research proposals in accordance with the policies and guidelines set by the University. All researches shall fall within the research priorities and the research agenda of the University.

a. Call for Research Proposals

The Office of the Vice President for Research and Development, Extension and Training (VP-RDET) facilitates the development, approval and funding of R & D proposals through the University Director of Research and Development (R&D). Submission of research proposals although has a periodic schedule may be called anytime during the year, particularly when there are opportunities for external funding. In such cases, research proposals may be prepared in accordance with the thrusts of the funding agencies.

1. Institutionally funded proposals. Submission for research proposals for institutional funding (from the SB fund) are scheduled every January and July. Each proposal shall be evaluated in accordance with the policies and guidelines implemented by the University. All proposals shall follow the prescribed Guidelines (Fig. 5.1).

2. Externally funded proposals. The schedule of submission for research proposals for external funding is the same as those for institutional funding. A proposal submitted for internal funding may be endorsed for external funding if it found appropriate through the evaluation. However, whenever there are opportunities for funding, or

when requested by funding agencies, research proposals may be submitted anytime.

The University President, upon recommendation of the VP-RDET, shall endorse research proposals prepared for external funding. Before endorsing to the President, the VP-RDET office shall subject each proposal to technical review by research specialists who are experts in research fields covered by the proposal. Proposals for external funding shall follow procedure shown in Figure 5.2.

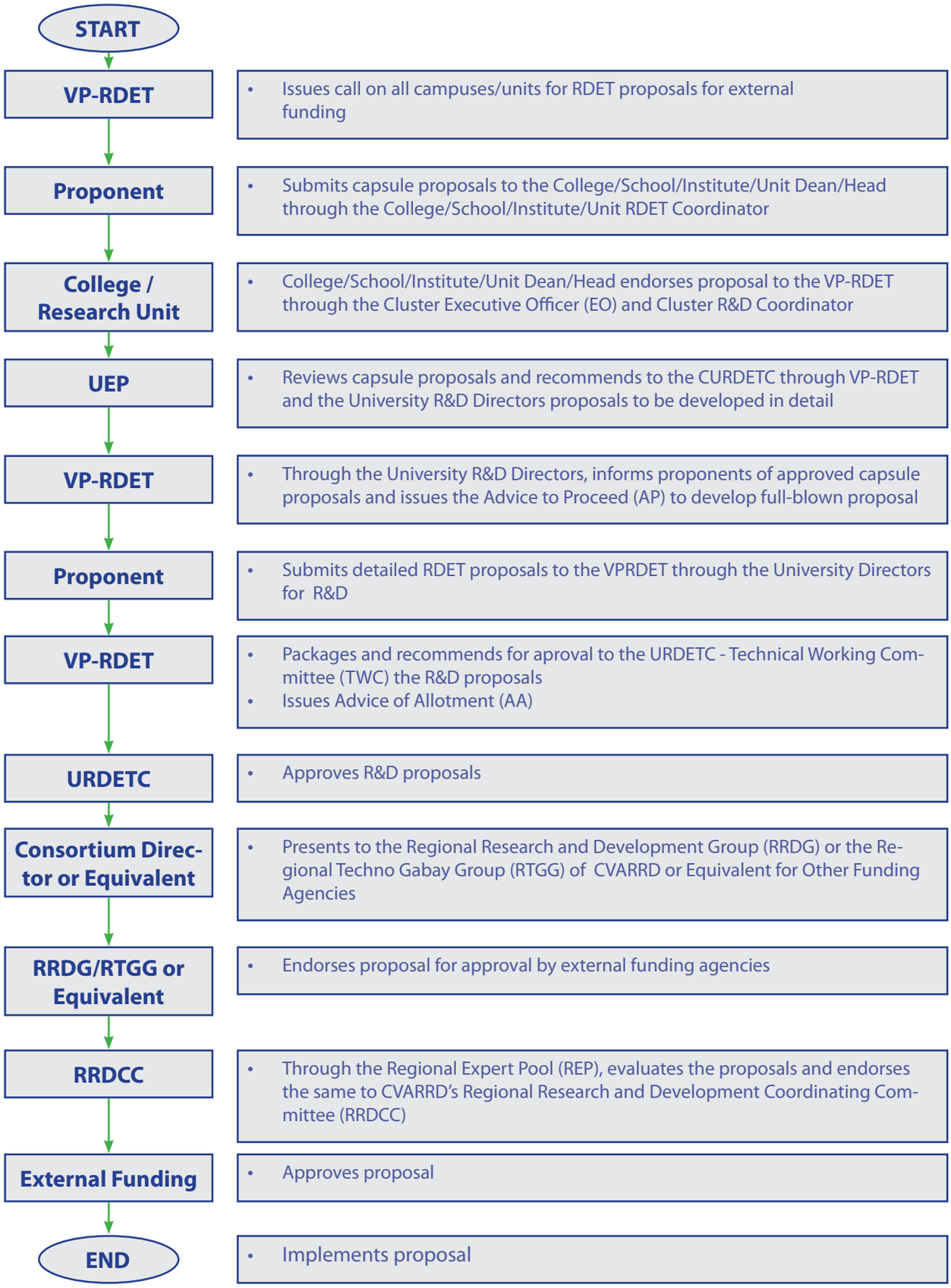


Figure 5.1. Flowchart for processing proposals for internal funding

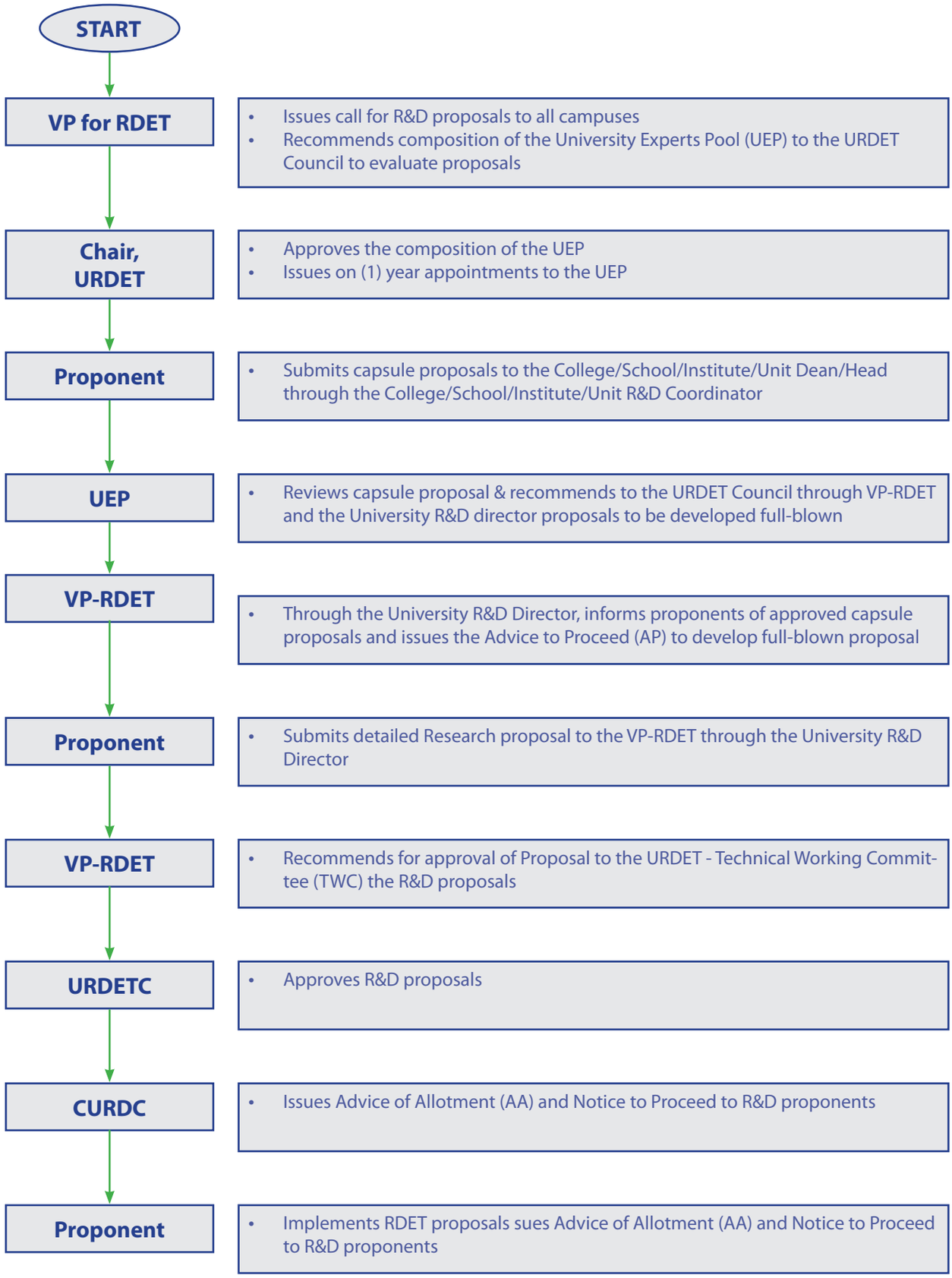


Figure 5.2. Flowchart for processing proposals for external funding

b. Criteria in Evaluating R&D Proposals

Following are some considerations under each criterion to evaluate the Projects proposals:

1. Tangible Impact on Improving Quality of Academic Programs. The extent to which the proposal is expected to bring direct benefits to the policy formulation aimed at improving quality of academic program;

2. Multidisciplinary Approach. The involvement of proponents coming from different disciplines is given preference in the evaluation of proposals; The partnership of senior and Junior researchers (mentor-mentee relationships) is also desirable.

3. Clarity and Manageability. The proposal should be clear, concise and implementable within the period as proposed. Among the desirable characters should be:

    - Key activities of the project and time for each are clearly outlined in the proposal.
    - Attainable outcome results (long term) and output results (short term or immediate)
    - Realistic performance measurement indicators
    - Small scale and short project cycle (able to demonstrate results within shorter period)

4. Sustainability, Replication and Up-scaling. The extent to which the expected results of the proposal have the potentials to be replicated or up-scaled in larger scale, in another geographic region or in other context.

5. Realistic and Relevant Budget. Among these should include:

    - The extent to which the proposed budget is realistic.
    - The extent to which the proposed budget items are relevant.

c. Evaluation of the Proposals

Projects ideally should cover one-year implementation period. All proposals will be reviewed by a campus committee designated. Consolidated proposals by campus will be endorsed and submitted to the University level for final review and approval by a committee to be designated by the VP-RDET. Evaluation team in the campus and university level can make use of the set of evaluation criteria as mentioned above.

d. Application Procedure

Potential researchers from various colleges and campuses of the university are invited

to submit a one-page research concept note presenting briefly the statement of topic/problem, aims and significance of the research project, necessary background information, expected outcomes and benefits, and scope and limitations. Short-listed applicants will be asked to submit an 8-10 page fully developed research proposal.

e. Project Management

The University and Campus Research department will serve as the project management office. Flowchart of procedures, activities and schedules as well as monitoring and evaluation is provided and must be followed strictly.

4. Guidelines on Implementing Research Projects

a. Developing and Executing Legal Agreements

Approved research proposals for funding (internally or externally) shall be subject to Memorandum of Agreement Understanding (MOA/MOU) between the proponent and the University and/or the funding agency, subject to approval of both parties. Upon the completion of the MOA/MOU, a notice to proceed shall be issued by the VP-RDET or the funding agency.

b. Designations of Research Personnel

Research designations shall be issued based on the approved research project (program, project, study) strictly following standard research project hierarchy. For each duly approved research project, designations shall be issued by the University President to all faculty members and researchers to be involved in the implementation of the Project, specifying the academic workload of the involvement of each of the faculty, e.g. as Program Leader, as Project Leader, as Study Leader, or as Project Staff. Only the highest involvement per project shall be credited. When two are involved as co-leaders the equivalent academic load shall be halved between them. Other hired members of the research team shall be issued designations or contracted depending on the job specified in the approved research proposal. The designation shall specify the duration of the involvement of each researcher. Likewise, the designation shall provide that the researcher shall be on vacation sick leave (VSL) for the duration of the designation.

c. Purchasing project supplies and equipment

Purchase of project equipment, supplies and materials shall be implemented following the standard government procedures of public bidding. The annual procurement plan shall also be required for such purchases.

d. Program of work and budget

The program of work and line-item budget (LIB) of the approved research project shall be strictly implemented as programmed. A project implementation period may be extended only in meritorious cases of because of force majeure. A letter of request for the purpose shall be made to the President or the funding agency by the Project Leader. When the request is justified, the request may be granted.

With respect to the LIB, transfer of funds from one line-item budget to another may be

allowed as long as the amount does not exceed 15 percent of the line item. When the needed realignment exceeds 15 percent of the line item, the project leader needs to request for realignment of funds to the VP-RDET for internally funded projects and to the funding agency for externally funded projects. Only upon approval of the request shall the allocation change be formalized and implemented.

e. Research Project Reports

The project leader shall submit a quarterly Progress Report in the prescribed format. The report shall be the basis of monitoring and evaluation of the progress of project implementation. The progress of project implementation with respect to the plan, based accomplishment targets or deliverables and specified in the approved project proposal.

Likewise, a semi-annual Audited Financial Report (AFR) shall be prepared and submitted to the VP-RDET and the funding agency by the ISU Accounting Department. However, a Project Leader may request for an updated AFR as deemed necessary.

f. Transferring project leadership

Project leadership may be transferred to another upon request or incapacity of the incumbent or when University management finds it necessary. When the Project Leader leaves for at least three months, he should recommend someone to take his place while he is out. To ensure the smooth implementation of the project, the substitute leader should have the same field of specialization.

g. Project monitoring and evaluation

A systematic monitoring and evaluation (M&E) shall be implemented for all research projects. The evaluation shall be based on the detailed action and financial plan as embodied in the approved research proposal. For the purpose, prescribed M&E forms shall be used. The cumulative progress of the project shall be closely monitored to ensure that project outputs and deliverables shall be attained on time as envisioned and scheduled in the research proposal.

h. In-House Reviews

An integral component of the M&E of ongoing and terminated researches shall be the conduct of a regular R&D Agency In-House Review (AIHR) by the University. This shall be conducted once a year. The AIHR shall be done in coordination with the pre-AIHR reviews of the different ISU campuses and clusters. A campus may opt to conduct other reviews as it may see fit.

5. Guidelines on the Appointment of the University Expert Pool (UEP)

a. Importance of the UEP

The University Expert Pool (UEP) is necessary for the implementation of R&D policies of the University. The Pool shall:

1. Provide expert advice and services in translating the University's Plans/Programs

into specific activities and output(s);

2. Provide expert advice in the formulation, packaging, monitoring and evaluation (M&E) of S&T programs/projects;

3. Act as reviewer/evaluator during R&D program reviews, pre-agency in-house reviews, agency in-house reviews, field visits, and other related M&E activities of on-going projects;

4. Act as resource person during symposia, workshops, techno-fora, field days and other consultative meetings;

5. Assess relative contribution of R&D projects and activities towards achievements of goals and expected outputs;

6. Provide expert advice in the preparation and packaging of R&D proposals and IEC materials; and

7. Perform other tasks that may be requested/assigned by the VPRDET from time to time.

b. Operationalization of the UEP

In order for the UEP to function effective, it shall operate based on the following guidelines:

1. The UEP shall be composed of commodity experts and specialists in their field of endeavors;

2. Upon the recommendation of the VPRDET, the composition of the UEP for the following year shall be approved by the OP during the 4th Quarter of the preceding year. The members of UEP may be renewed or changed depending on their performance and availability;

3. The OP shall issue the appointment of the members of the UEP selected to do a specific activity;
4. An activity/task (e.g., R & D proposal packaging) shall be undertaken by only 4-5 experts from the UEP;

5. The experts should be able to finish the work with output(s) required within the time duration specified in their terms of reference but not to exceed three (3) months for each activity;

6. The UEP may be utilized by all groups (R&D, Extension, KTS) depending on the tasks required and the UEP members' expertise/specialization;

7. Depending upon need, the UEP may include experts from other institutions and regions in the composition of the UEP.

6. Allocation of Funds and Utilization of Supplemental Budget for R&D

In support to the university's quest for excellence in its academic and research standing, a special budget allocation amounting to 10% from tuition fee income has been earmarked and approved by the governing board. The annual allocation is the mainstream source of fund is expected to boost ISU's readiness to meet its R&D commitments and target and to further ensure sustainability and continuity of its operations.

Likewise, this extraordinary gesture of ISU sends a positive message to our partner agencies and stakeholders of our sincerity to invest in research and development as a main strategy in contributing to the development of communities and academic services.

To ensure effective and efficient utilization of the said budget, the following guidelines and criteria are hereby adapted.

a. Guidelines on Utilization and Item Allocation

The following guidelines will be adapted in the implementation of R&D projects funded by the Supplemental budget:

1. Direct Cost for R&D – 65%

   - Support to the university's priority R&D commodities (Agriculture, Environment, Natural Resources, Fisheries, Industry, Engineering, Science, etc.)

   - Higher Education Research – University Graduate Tracer Study, Impact Assessment of HEI Researches; Cost Effectiveness of Curricular Program; Policy Research on the Utilization of HEI Research Outputs; Policy Researches on Assessment and Evaluation of Academic Programs; Rationalization of Fees

   - Developmental Research – Product Development, Packaging and IPR Management

2. Support to Paper Presentations in Scientific Conferences, Fora, etc. – 10%

   Financial assistance will be provided to researchers presenting research papers in national/international symposium local and abroad (preferably same paper will be published in refereed journal).

3. Capacity building – 15%

   In-house training will be conducted locally to further enhance the capacities of researchers in preparing high quality proposals, writeshops in producing publishable R&D papers, and advances in methods of research.

4. Incentives – 5%

   This refers to cash incentives for outstanding researchers who garnered prestigious awards, published articles in refereed journals and secured approval for Intellectual Property Rights. A separate guideline is provided for entitlements and claims of incentives.

5. Overhead/Operations and Support to Student Thesis Contest – 5%

7. R&D Workload Guidelines

In order to rationalize the functions of the faculty members and research staff with respect to their R&D functions, a workload scheme serves as a guide in assigning research loads.

Faculty members who are appointed Assistant Professors and up are expected to carry a regular or a minimum research or extension workload (Administrative Manual, 2005) as follows:

For every approved research of at least one (1) semester duration:

Level	F.T.E.
International/National	
Program Leader	6.0
Project Leader	5.0
Study Leader	4.0
Regional	
Program Leader	5.0
Project Leader	4.0
Study Leader	3.0
College-Based/Institutional (local)	
Program Leader	4.0
Project Leader	3.0
Study Leader	2.0

The implementation of the preceding faculty teaching equivalent shall be subject to the

following Working Guidelines:

a. A detailed accomplishment/progress report in the prescribed format shall be required to support claims for research;

b. For team research, a proportionate credit unit depending on the degree of involvement shall be given to each member;

c. For researches where the researcher/s receive/s honorarium, credit unit will be given for purpose of determining workload but not included in the computation of excess load;

d. Appropriate authorities must approve the institution/agencies researches (where applicable);

e. Researches funded by other agencies shall be covered by a Memorandum of Agreement (MOA) or its equivalent between ISU and the funding agency; and

f. The maximum workload for research is nine (9) FTE per week.

Research staff are expected to carry a regular minimum workload. The following guidelines shall govern the workloads of regular research and extension staff of the University:

a. The Official Working Hours (OWH) for all regular research staff shall be 40 hours per week.

b. The regular research and extension workload equivalent (REWE) for all research and extension staffs will be 21 per week.

c. For every approved research or extension project of at least one (1) semester duration, the following research and extension working equivalents are:

Level	RWE
International/National	
Program Leader	6.0
Project Leader	5.0
Study Leader	4.0
Regional	
Program Leader	5.0
Project Leader	4.0
Study Leader	3.0

Level	RWE
Institutional (local)	
Program Leader	4.0
Project Leader	3.0
Study Leader	2.0

8. De-loading of faculty for RDET

Based on the preceding faculty workload equivalents, faculty members shall be entitled for de-loading as follows:

Rank	Workload (FTE)		Total FTE
	Instruction	R&D	
Instructor	18	3	21
Assistant Professor	15	6	21
Associate Professor	12	9	21
Professor	9	12	21
College Professor	6	16	21
University Professor	3	18	21

The above loading scheme of faculty members for teaching, research and extension assignments shall be the guide in assigning teaching which is based on the minimum regular FTE workload of 21 units. The de-loading of the faculty from teaching to research shall be based on approved project proposals to justify de-loading.

The Faculty Teaching Equivalent (FTE) of faculty members conducting R&D are as follows:

Level	F.T.E.
International/National	
Program Leader	6.0
Project Leader	5.0
Study Leader	4.0

Level	F.T.E.
Regional	
Program Leader	5.0
Project Leader	4.0
Study Leader	3.0
Institutional (local)	
Program Leader	4.0
Project Leader	3.0
Study Leader	2.0

9. Guidelines on the Provision of RDET incentives

Support for the Sourcing Out Research Funds

The University shall encourage and promote the submission of RDET proposals to national and international research funding institutions for financial support. Towards this end, the University shall provide financial incentive to each of the ISU faculty and personnel directly involved in the preparation of a project proposal approved for financial support by any funding institution. Chargeable from University funds, the financial incentive shall be equivalent to one percent (1%) of the total budget of the project but not to exceed one hundred thousand pesos (PhP100,000.00). The provision of the financial incentive is subject to the following conditions:

1. The project proposal is officially sanctioned by the University through a formal agreement (MOA, MOU, etc.) between the funding institution and the University;

2. Other documentary requirements for funding [approved line item budget (LIB), work and financial plan (WFP), schedule of tranche releases and deliverables (STDR), or as required] have been duly accomplished and formalized/approved; and

3. The first tranche of the project fund was released by the funding institution and received by the University.

Support for Paper Presentation in Scientific Conferences

The University will provide administrative and/or financial support for the presentation

[1] Most of the provisions are adopted from the CHED guidelines for supporting paper presentation in international conferences.

of scientific papers by faculty and researchers in national or international conferences. However, University support shall be subject to the following criteria[1]:

1. All paper presentations in national or international conferences shall be approved by the Office of the President.

2. Only full-time faculty members or researchers are qualified to apply for support;

3. In case of multiple authorships, only one researcher (the presenter of the paper) shall be considered for support;

4. Only paper presentations of research outputs generated from researches duly recognized through the University R&D Management System shall be given financial support by the University. The personnel requesting support must be a member of the research team (duly designated as Program Leader, Project Leader, Project Component Leader, or Project Staff). Poster presentations may also be allowed provided it (the poster paper) will pass through the same process; provided further that only administrative support shall be given by the University through the issuance of a travel authority/order but no financial support shall be provided.

5. The researcher applicant shall pass through a screening and evaluation process and should comply with the following requirements:

    a. Application letter addressed to the University President, submitted at least two months before the start of the conference;

    b. Letters of endorsement/recommendation passing through channel starting from the concerned Program Chair, Dean, and Campus Head where the applicant is affiliated, and through the Office of the University Vice President for RDET;

    c. Attachment of the full text of the paper to be presented (with abstract) in the format prescribed by the conference organizers;

    d. Proper letters of invitation and acceptance from the conference organizers;

    e. Conference brochures with details on venue, travel and logistical arrangement needed;

    f. Details of financial assistance (amount, coverage, proposed utilization) in case applicant is requesting for financial support from the University (or project) funds;

    g. Applicant's latest brief curriculum vitae highlighting his/her latest research-related activities: ongoing or completed research studies, projects, programs; papers presented in scientific conferences, forums, in-house reviews; pending or registered patents; research management positions; etc.;

6. The paper shall be immediately subject to technical review by the Office of the VP RDET;

the result of the review shall be the basis of the endorsement of the VP RDET to the Office of the University President;

7. The applicant shall be informed by the Office of the President regarding the approval or disapproval of his/her application. If disapproved, the applicant will not be allowed to go and present his/her paper. If approved, the following policies shall apply:

   a. If support from external sources was obtained by the applicant and the conference will be abroad, he/she will be provided a Travel Authority (TA) and will be given local travel support by the University. Otherwise, if the conference is held within the country, the appropriate Travel Order (TO) shall be issued, also with the local travel support.

   b. If the request is for financial support, he/she will provided the amount needed or a part thereof based on the amount requested, or as recommended by the VP RDET, subject to the availability of funds. Support may include: round trip economy air fare and the registration fee; a fixed living allowance may be provided, as approved by the President.

   c. The grantee is responsible for travel arrangements (TA or TO, obtaining visa, permits, tickets, etc.);

   d. A maximum of two paper presentations in a national conference and one paper presentation in an international conference per College shall be supported by the University.

8. Within one month after return from a conference, the grantee shall submit the following to the Office of the VP RDET:

   a. A certification of proof of paper presentation (Certificate of paper presentation or recognition, aside from the Certificate of Attendance) in the conference;

   b. A Travel Report indicating highlights of the conference, observations, lessons learned and recommendations on how ISU can improved on its participation in international conferences;

9. Within six months after the conference, the paper shall be presented in a University program organized by the University RDET Office. A bi-annual presentation forum shall be held for the purpose. All paper presenters in international conferences for the past six months or so shall present papers in the University forum.

Support for Publication of Scientific Papers

The University shall provide support for the publication of research outputs in internationally

[2] The Thomson Reuters maintains three citation indices: (1) Science Citation Index Expanded, (2) Social Science Citation Index, and (3) Arts and Humanities Citation Index). Also, the SciVerse Scopus citation index has another database of scientific journals.

peer reviewed journals.
In cases where a researcher's scientific paper is accepted for publication and a publication fee is required by the journal, the University shall provide financial support for the purpose. Provided, the journal is internationally peer reviewed and found in the Thomson Reuters (ISI) international indices[2] or [at least] Scopus-indexed.

To avail of the grant, the researcher shall forward a request letter addressed to the University President through the Office of the VP RDET, endorsed through channels. The VP RDET shall endorse the request to the President with the corresponding recommendation for appropriate action (approval or disapproval). When approved by the President, the amount of the fee requested for the publication of the paper shall be granted to the researcher payable to, or as provided for by, the journal.

Support for Published Research Outputs

The publication of research outputs in international peer reviewed journals, where findings and conclusions are validated through rigorous peer review, is the established standard in science. Journals that meet the high standards of genuine peer review are included in citation indices recognized in the international scientific community – Thomson Reuters (ISI) and Scopus. On the other hand, publication or recognition of inventions resulting from research outputs come in the form of duly registered patents, utility models, designs, trademarks, and copyrights. In the Philippines, these research outputs are issued by the Intellectual Property Office (IPO).

The University shall promote and encourage the publication of research outputs in internationally peer reviewed journals, peer-reviewed books or book chapters and to researchers who are able to have their inventions IPO-registered. For the purpose, the University shall promulgate a financial rewards scheme. Providing the financial incentives to deserving ISU researchers shall be approved by the University President through the recommendation of the VP RDET. In a case where more there are more than one author from ISU (e.g. co-authors), the award shall be shared equally between (among) the ISU co-authors.

Categorized into various typologies of research outputs, the financial reward system shall be as follows:

Incentives for Journal publications:

Authors or research outputs published as scientific articles in international peer reviewed journals shall be given the following financial incentives:

Nature of Publication	Financial Reward
Published article in a Journal indexed in Thomson Reuters (formerly ISI)	PhP 50,000.00
Published article in a Journal indexed in Scopus	PhP 40,000.00

Nature of Publication	Financial Reward
Published article in a CHED-categorized international journal	PhP 30,000.00
Published article in a CHED-categorized national journal	PhP 20,000.00
Published article in other journals of international circulation	PhP 5,000.00

For Journal publications, each award shall be subject to the following guidelines:

1. A letter addressed to the President, through channels, forwarding the information regarding the publication;

2. An attached photocopy (or pdf) of the complete pages of the paper with the header and footer as published, including the front and back cover of the journal indicating when and where the paper was published; a copy of the table of contents may be included.

3. The journal must be in any of the specified scientific database indices; and

4. Communication exchanges between the researcher and the concerned journal editor(s) may be attached.

Incentives for Book and Book chapters, and peer-reviewed Conference Proceedings:

Research outputs published as peer-reviewed books or published as chapters in peer-reviewed books are also eligible for financial incentives as follows:

Nature of Publication	Financial Reward
A peer reviewed book published by a reputable academic publisher	PhP 40,000.00
A chapter in a peer-reviewed book published by an academic publisher	PhP 30,000.00
A full paper in a peer-reviewed international Conference Proceedings	PhP 5,000.00

Granting a reward for a book or book chapter publication shall be subject to the following guidelines:

1. A letter addressed to the President, through channels, specifying the information regarding the publication.

2. For a book, a photocopy of the cover, the preliminary pages including the table of contents, and other relevant parts of the book;

[3] The "Best Paper" award should be from a reputable scientific body, consortium, organization or institution duly recognized in the scientific community.

3. For a book chapter, a photocopy (or pdf) of the chapter, including the cover of the book, the copyright page, the table of contents, and other relevant parts;

4. A copy of the book should be shown by the author. Preferably, a copy should be donated to the University library in the campus where the author is connected.

5. Communication exchanges between the researcher and the concerned book editor(s) and the publisher editor(s) may be attached.

6. Only books published by academic publishers or by reputable publishing houses shall be considered for the incentive.

Incentives for IPO issued Certificates

Researchers whose research outputs are registered with the Intellectual Property Office (IPO) of the Philippines shall be given financial incentives. For each IPO Certificate issued, the financial reward shall be as follows:

Nature of IPO Certificate Issued	Financial Reward
An Original Invention (Patent)	PhP 50,000.00
A registered Utility Model	PhP 40,000.00
A registered Copyright	PhP 30,000.00
A registered Trademark	PhP 20,000.00

The reward shall be per registered research output. In case there are more than one registered owners from ISU, the reward shall be divided equally among them.

Support for Best Papers Presented in Scientific Conferences

Incentives for Best Papers presented in Scientific Conferences:

Any University researcher who presented his/her research output in an international, national or regional scientific conference whose paper is awarded or recognized as "Best Paper"[3] shall be given financial incentive by the University in recognition of his/her performance of bringing honor to ISU. Based on the level, the financial rewards shall be as follows:

Level of "Best Paper" Award	Financial Reward
International conferences	PhP 15,000.00
National conference	PhP 10,000.00

Level of "Best Paper" Award	Financial Reward
Regional conference	PhP 5,000.00

Incentives for Best Paper Awards during the ISU AIHR:

Papers presented during the University Agency In-House Review that meet the criteria and judged by the Panel of evaluators to be deserving of Award, by Category, shall be given financial rewards as follows:

Prize (Rank)	Financial Reward
Best paper award (Champion)	PhP 5,000.00
Second Best Paper award	PhP 3,500.00
Third Best Paper award	PhP 1,500.00

These rewards shall be awarded on-the-spot during the University annual in-house review, provided that each of the papers awarded shall meet the minimum weighted grade of 85% based on the criteria used by the Panel of Evaluators.

10. Guidelines on Search for Best Undergraduate Research

a. Background

The Isabela State University as a premier learning institution is committed to produce quality graduates in the field of agriculture, natural resources management, engineering, arts and sciences, health and related disciplines. Likewise, the university's developmental role is to promote countryside development through the generation, verification, adoption and commercialization of appropriate technologies and strategies for sustainable development.

Consistent to the framework of the newly approved University R&DE council, there is a need to mainstream student researches into the University R&D/E thrusts and agenda.

To implement the foregoing, the research department is mandated to provide mechanism to assess, screen, monitor, and evaluate all proposals, on-going and completed R&DE programs and projects in the University, including undergraduate and graduate thesis/ research problems.

The conduct of regular evaluation of undergraduate research should be done to serves as a venue wherein significant results and accomplishments from completed researches are presented and reviewed for proper recognition. Likewise potential technologies are identified for further testing, verification and piloting.

b. Objectives:

The main objective of the search is to encourage undergraduate students to develop outstanding thesis by giving incentive to their work. Specifically, it aims to:

1. Select outstanding research (or its equivalent) for technical, technological and social science courses in the undergraduate level;

2. Provide certificate/plaque of recognition to students with outstanding research work;

3. Publish in university journal outstanding completed research studies conducted by undergraduate students.

c. Definition of Terms

1. Thesis – is a lengthy academic paper based on original research, especially as work toward an academic degree (Microsoft® Encarta® 2006).

2. Research – an organized study, a methodical investigation into a subject in order to discover facts, to establish or revise a theory, or to develop a plan of action based on the facts discovered (Microsoft® Encarta® 2006)

3. Thesis Equivalent – Other than the word thesis, other equivalent research works leading (or a requirement) to a completion of an undergraduate degree are the following: Case Study, Action Research, and Special Research Problem.

d. Mechanics of Implementation

The search for best undergraduate thesis will be undertaken in two separate categories namely: Technical, Technological and Social Science Categories

1. Who May Join?

   Theses/Research (or equivalent) of all graduating undergraduate students can be considered for the best research award.

2. Selection is done sequentially in four levels, namely:

   - Department Level
     Every department screens students' research during the final defense. The selection committee, composed of the chairman and the members of the faculty, selects one outstanding research for the department.

   - College/Component Campus Level
     The best research for each college is then submitted to the campus director for research for final screening. All nominees from each college are evaluated

by a screening committee composed of the Research management team and invited evaluators. There will be scheduled oral presentation by each college/ campus candidate. A special Undergraduate R&D symposium per cluster will be conducted where nominees will be required to make oral presentation.

- University Level Contest
  Best papers from the four (4) clusters in the four categories will compete in the university level.

e. Awards and Incentives

1. All cluster nominees for the best thesis/best poster are given a certificate of recognition.

2. At the conclusion of the University R&D symposium, the best theses for technical, technological, social science and poster categories are awarded the following:

   - Plaque of Recognition

   - Cash Award

     1st Place = 1,500 pesos
     2nd Place = 1,300 pesos
     3rd Place = 1,000 pesos

f. Criteria for Selection

The following are the criteria for the selection of the best research award for both categories.

Criteria		Weight
I. Creativity and Originality of Work		30
• Rationale/State of the art	(10%)	
• Objectives	(5%)	
• Conceptual/Analytical framework/ Methodology	(15%)	
II. Quality and Organization of the Paper The technical paper should be comprehensive and well written with clarity of presentation including graphs, table, figures, photos. The scientific approach(es) is (are) valid and results/outcomes are reliable/dependable.		30
• Accuracy of figures and language	(10%)	
• Clarity and style	(10%)	
• Cogency and logic	(10%)	

Criteria		Weight
III. Relevance/Significance The output of the project should be contributing to the body of knowledge and advancement of the concerned profession. It should contribute in the practice of the profession in various industries, academe, and communities. • Contribution to new knowledge and S&T advancement(20%) • Contribution to industry/academe/community development	(10%)	30
IV. Quality of Oral Presentation • Clarity of Presentation, Visual Aids, Stage Presence, Voice Modulation, Response to inquiries	(10%)	10

A cut-off point of 85 percent for the above criteria is maintained during the final selection. The candidates receiving the highest points and meet the cut-off point are considered winners.

11. Guidelines on Manpower and Physical Resources Development

a. Human Resources

The manpower and research facilities development program is based on the concept of Minimum Resource Requirements for R&D Capability in the National Agriculture and Resource Research and Development Network (NARRDN).

The basic minimum requirements for manpower and research facilities (equipment and infrastructure) facilitate the evaluation of research capability and needs and become the bases for building up or upgrading RDET capability. This program would enable ISU to attain or surpass minimum requirements in higher level of regional excellence.

Research areas that need to be strengthened in the next ten years are divided into major commodities as follows:

Commodity Area	Areas of Specialization
• Socio-Economics	Economics / Agricultural Economics, Agribusiness, Sociology/Rural Sociology, Rural Extension, Community Development, Development Communication
• Education/Social Science	Science and Mathematics, Education and Teacher Training, Health and Health Profession, Humanities, Social Science
• Information Technology	Computer Networks, Information and Database Management, Computer Hardware, Software Design, Systems Management and Administration

Commodity Area	Areas of Specialization
● Crops	
• Mango	Pest and disease management, Production systems, Postharvest handling systems and facilities, Market promotions, Molecular studies and genetic engineering, Rsource mapping using GIS, Technology promotion, Supply chain, Processing systems and machineries
• Banana	Pest and disease management, Product and packaging systems, Supply chain, Tissue culture production, Molecular studies and engineering, Germplasm conservation, Postharvest handling systems and facilities, Technology promotion, Policy advocacy
• Vegetables	Organic production systems, Pest and disease management, Nutrient and water management systems, Supply chain, Welfare of producers, Germplasm conservation, Post harvest, Products and packaging systems
• Peanut	Varietal improvement/germplasm conservation and management, Germplasm collection and improvement, Nutrient and water management, Post harvest handling systems, Products and packaging systems, Farm tools and machineries
• Rice	Farm production systems, Quality planting materials, Organic production systems, Postharvest handling system, Welfare of producers
• Corn	Farm production systems, Germplasm conservation and management, Technology promotion
● Livestock	
• Swine/poultry	Commercial scale livestock production
• Pasture-Ruminants	Conservation and improvement of local animal genetic resources
● Farm resources & Mgt.	Agricultural Engineering, Post harvest Engineering, Water Resources management, Soil Resources, Agro-meteorology, Agricultural Systems
● Forestry	
• Bamboo	Bamboo production management, Postharvest processing, Supply chain

Commodity Area	Areas of Specialization
• Lumber and Panel	Nursery and plantation management
• Products, Furniture and handicrafts, Poles and piles	Forest biotechnology (breeding), Product development, Marketing and socio- economics
• Bioethanol from cassava and sweet sorghum	Varietal improvement, Pest and disease management, Cultural management and farming systems
• Environmental services	Watershed management, Integrated soil and water resources management, Environmental hazard management, Pollution and waste management, Vulnerability impact assessment
• Biodiversity conservation and Ecotourism	Management of ecotourism sites, Biodiversity conservation, Ecotourism product development, Ethnobotanical, socio-economic and cultural studies
● Engineering	Agricultural Engineering, Electronic Engineering, Electrical Engineering, Industrial Engineering, Communication Engineering, Instrumentation Engineering, Telecommunications, Semiconductor Circuit Design
● Fisheries	Marine biology, Marine conservation, Ecology and population dynamics
● Apiculture	Practical and commercial beekeeping

The number of manpower to be developed and trained for a given commodity shall be confined to the basic minimum. The basic minimum concept, however, shall be augmented by the establishment of a pool of trained specialists to fill any manpower deficiency as the need arises.

b. Physical Resources

A similar development program for research facilities shall be adopted. Whenever deemed justifiable, sophisticated research equipment, especially those electrically or electronically-operated and necessitating periodic calibration, should be kept in a Central Laboratory.

For infrastructure facilities which are obviously non-transferable, a different approach based on individual research station requirements has to be adopted.

12. Guidelines on Technology Transfer and Commercialization

It is hereby a policy of the University to share knowledge and technologies among

government and other institutions to ensure that scientific and technological developments are accessible to a wider range of users who can further develop, share or exploit the knowledge (for socioeconomic or technical database) for policy formulation and technologies for developing new products, processes, materials or services.

The following guidelines shall be adopted in technology transfer and commercialization:

- Test against maturity indicators - passing the piloting stage, stability or industry standards and risk assessment evaluation;
- Test against viability (STEEP) indicators – social acceptability, technical feasibility, economic viability, environmental soundness and political acceptability;
- Technology promotion through publicity and other appropriate communication strategies such as technology forum and other fora;
- Publication in refereed R&D journals, R&D highlights, etc.;
- Tapping of conduits or channels for technology transfer and commercialization like the University Business Affairs Office (UBAO) as venue for:
    - Developing the criteria of commercializing the technologies generated in the University;
    - Module development for crops, livestock, forestry, and environment, etc.; and
    - Income generating projects that complement the three major thrusts of the University;
- Tapping of Technology Development Centers like Land Bank.

13. Guidelines on R&D Publications

One of the fundamental roles of ISU in the dissemination of R&D results is the responsibility in providing a well written, concise, technically correct, and easy to read research report. Researchers should be able to demonstrate good writing skills because the results of R&D activities are as successful as the writers and the corresponding reports that emanate from them.

The print and multimedia R&D publications and other publications of ISU are the public face of the University and they have significant influence on both public and private perceptions. R&D books, papers or results of original research works such as technical papers and notes, scholarly journals, journals of information, newsletters, booklets, reports, posters, training manuals, modules, brochures and any printed material intended to be transmitted and communicated by means of any device or process, including the use of the web, shall be regulated using acceptable standards or style.

All faculty researchers, administrative and support personnel and students who would like to publish their scientific R&D works in any of the University R&D Journals and Journal of Information of campuses shall be governed by the policies and guidelines on publications.

a. Editorial Board

There shall be one University R&D Journal that shall be internationally peer reviewed. Towards this end, its Editorial Board shall be composed of researchers who have published in international peer reviewed journals and shall come from varied fields of specialization.

As a group, the Editorial Board shall provide guidance for the direction of the publication and should communicate on a regular basis to discuss and review the policies, directions and contents of the journals. They shall have responsibilities towards:

a. The authors as they provide the guidelines in the preparation and submission of the manuscripts;

b. ISU as owner of the publication; and

c. The readers to advance information to the benefit of the public.

An Editorial Staff shall likewise be organized to fundamentally consist of the following:

- Editor-in-Chief;
- Associate Editors representing the sectoral fields of specialization corresponding to the coverage issue of the publication;
- Circulation Manager;
- Lay-Out artists;
- Cover Design Artists; and
- Encoders.

The selection of the Editor-in-Chief is very critical to the Editorial Board. Reporting directly to the Editorial Board, he/she oversees the Editorial Staff and makes the necessary recommendations to improve dissemination of the scientific journal and have complete authority over editorial contents within the defined scope of the scientific journal. He/she should possess a general scientific knowledge of the areas covered in the journal; have the skill in the art of writing, editing and critical assessment; and establish policies and procedures in the submission, processing, evaluation and consequently publication of the scientific journal.

b. Peer Reviewers

The quality of research outputs is judged by the peer review mechanism. The scientific and academic advancements of academic and research institutions and scientists are based on peer-reviewed publications. Unknown to each other, the peer reviewers shall be selected through invitations from research institutions/agencies other than the author(s). Each of the peer reviewers must be a recognized scientist through his/her publications in international peer reviewed journals. A statistician may be added as a member of the panel of reviewers when necessary, as evaluated by the editor in chief.

The reviewers shall have responsibilities towards:

1. The authors by providing a written and unbiased feedback on the scientific merits of the work, its conciseness, clarity and relevance, and the maintenance of confidentiality in the review process;

2. The editorial staff by providing informative, thoughtful, constructive and fair criticisms with respect to the originality and scientific merits of the research work, including the standards of the research journal; and

3. The readers by protecting them from flawed researches that cannot be validated and ensuring that the article citations are all relevant works of other scientists.

c. Timeliness of Publication

Research outputs and information must always be published as soon as possible. Since it usually takes several months in the revise-and-submit cycles before the manuscripts get finally published in the journal, the Editors should be responsible for timeliness in manuscript submission, providing prompt responses and decisions related to the journal, and acceptance of the published articles.

d. Joint Authorship of Publications

Only those who have substantially contributed or made an important contribution to the research work should be listed as authors. Substantial or important contribution refers involvement in the conceptualization, overall design, implementation, completion and writing the research paper. To avoid administrative complexities, joint authorship resulting from the contribution from various people should be stipulated in the research contract or agreement.

The test for the claim of joint authorship is the ability of any of the named authors to take responsibility for the publication. More importantly, the field of specialization of each of the author shall have a bearing in the areas covered and tackled by the paper.

Usually the first named author in the manuscript is the senior author. It would be logical and fair that he/she the one who had the most significant contribution in the content of the paper, having been involved in the conduct of the research project, particularly in

the conceptualization and writing of the scientific paper.

e. Research Misconduct

All authors submitting manuscripts for publications in the University R&D journal shall refrain from research misconduct such as the following:

- Unethical treatment of research subjects;
- Fabrication of research data;
- Falsification of research data; and
- Plagiarism.

The unethical treatment of research subjects applies to obligation of the researchers relevant to the subjects of study, whether human or animals, particularly adherence to ethical standards in experimentation such as care and use of human beings and animals. On the other hand, fabrication and falsification of research data refers to the invention, recording, or reporting of fraudulent data. Fabrication and falsification constitute the most serious forms of misconduct in research as they result in scientific records that do not accurately reflect observed truth from research.

Plagiarism is a form of piracy which is defined as the appropriation of ideas, data or methods without adequate permission or acknowledgement from the owners.

f. Submission of Manuscripts for Journal Publications

The submission of manuscripts shall be guided by an Instruction of Authors that may be periodically updated depending on the focus and issue of the R&D Journal. However, the following style guide maybe used as basis in submitting manuscripts for journal publications:

1. Manuscripts
   Manuscripts should be submitted in a hard copy with electronic copy, or through electronic mail. The following content format shall be observed:
   - Title
   - Author/s
   - Abstract
   - Keywords
   - Introduction

- Methodology
- Results and Discussions
- Acknowledgment, particularly funding source (when applicable)
- References cited

2. Units of measure
   Use measurements and weights in the decimal system rather than fractions. The International Units (metric) system should be adopted. The % sign is used with numerals; otherwise, spell out percent or percentage. Other abbreviations and acronyms may be used if earlier identified in the paper.

3. Title
   A good title briefly identifies the subject, indicates the purpose of the study and contains key words, and should be as short as possible. The scientific names of crops should be used where possible.

4. Abstract
   The abstract must be completely self-explanatory. It must be very brief and includes the reasons for conducting the study, objectives, methods used, results and conclusion. The abstract should be capable of "standing alone" that describes the whole study. A good length for an abstract is 300 words.

5. Results and Discussion
   The results and discussions highlight the contribution of the authors to the science or existing body of knowledge covered by the scientific paper. Although it should be brief, it must be concise, precise, thorough and factual. The presentation of the results and discussions may be integrated, i.e. the results are presented and discussed immediately thereafter. On the other hand, all the results may be presented sequentially followed by an integrated discussion of the previously presented results. The author(s) may use either of the formats, however, the latter is preferred for the University R&D Journal.

6. References
   References should be arranged alphabetically by senior authors' surname. They should include names of all authors, complete title, publication, volume number and inclusive pages of references cited in the study.

7. Tables and figures
   The numbering of tables and figures should be in separate consecutive order. Insert each table or figure right after or within its textual discussion.

8. Abbreviations and symbols
   A sentence should not start with an abbreviation. Months accompanied by day and year are abbreviated using the first three letters except May, June and July.

9. Reporting time and dates
   Use the 24 hour time system with four digits. Dates are reported with day of the day first, then month, followed by the year (e.g., 08 Aug 2009).

   Where appropriate and for the purpose of promoting and enhancing the research productivity of HEIs, the policy guidelines for the CHED Accreditation of Research Journals shall be used as basic reference for updating and revision of these guidelines.

14. Guidelines on Research and Development-Extension and Training Continuum

Although there is an independent Extension and Training (E&T) Manual, this Section of the Research and Development (R&D) Manual is included as it covers the inseparable link between the two. The R&D and E&T continuum is extremely important to obtain a direct impact on instruction and resource generation for one and the target clientele on the other.

The following policy guidelines provide a meaningful linkage between R&D and E&T:

a. Sharing of vision, mission, goals and objectives by defining the roles and responsibilities in the R&D–E&T continuum, including human resources particularly the hiring of a Subject Matter Specialist trained not only for information dissemination but also for technology adaptation, technology integration and technology packaging and training;

b. Joint planning of R&D and E&T programs and projects in view of the separation of research and extension organizations (separate R&D Director from E&T Director, KTM Director and the Directors of Research Centers, each having different research and extension programs/projects, staff and budget);

c. Funding of interphase or overlapping functions of research and extension particularly along technology adaptation, technology integration and technology packaging and training;

d. Providing incentives for expanded responsibilities of researchers and extension workers;

e. Improvement of communication and collaboration among researchers, extension agents, farmers and farmer-eaders and support services; and

f. Improving communication and collaboration with the faculty and support staff, students, industry, clientele and the private sector.

15. Intellectual Property Policy and Guidelines

Treasuring the substantial creativity, innovativeness and intellectual contribution of the faculty, research and support staff, as well as students in the creation of intellectual property, the University adopts the following policy guidelines on intellectual property.

Article I - Policy Statement

As a higher education institution (HEI) tasked to develop quality human resources, researches and technologies for people empowerment, global competitiveness and sustainable development, ISU encourages technological innovations, creations, and inventions by researchers and faculty members. Pursuant to this, ISU-owned technologies, creations, and inventions when granted rights under existing intellectual property regimes, shall be made available for public use consistent with ISU's mandate to transfer and disseminate appropriate technologies, except for valid reasons that would prevent such case. In all cases, public access to ISU intellectual property rights is subject to rights of innovators, creators and inventors.

Article II - General Guidelines

Section 1. **Purpose of these Guidelines**

To provide implementing rules and regulations on the Policy of Intellectual Property.

Section 2. **Interpretation**

The Intellectual Property Code (IP Code) of the Philippines (Republic Act No. 8293), the Plant Variety Protection Act of 2002 (RA No. 9168), the Agriculture and Fishery Modernization Act (RA 8435), the Philippine Fisheries Code of 1998 (RA 8550), the Wildlife Act (RA 9147); Indigenous People Rights Act (IPRA Law), the Inventor's and Invention Incentives Act (RA 7459); the Magna Carta for Scientists, Engineers, Researchers and other Science and Technology Personnel in Government (RA 8439); the Administrative Code of 1987 (EO 292); and other relevant laws and their corresponding amendments, implementing rules and regulations are deemed legal bases of these Guidelines. In case of conflict in the interpretation of its provisions, these guidelines shall be interpreted in favor of the ISU inventor, author, breeder, or other holders of IPR.

Section 3. **Coverage and Scope**

1. **Coverage**
   All official employees of ISU and those of its attached Centers of Excellence, but not limited to the following, are covered by these guidelines.

   - Regular (plantillia) staff and faculty members whether in permanent, temporary (detail or secondment) status, and casuals;

   - Personnel under contract service, special appointments, or designation whether on a full-time or part-time basis including service or professional contractors, consultants, and postgraduate fellows, visiting scientists, those on sabbatical, project and study leaders, trainees, students, and others; and

   - Collaborators or partners whether in the national or international research and development network, other agencies and organizations whether public or private.

2. Scope

Intellectual property derived from ISU directed, assisted, commissioned, or contracted research and development projects.

Section 4. **Definition of terms**

1. "Assignee" refers to natural or judicial person to whom the rights, title to and interest in IP or proprietary information has been assigned by the inventor, creator, or breeder through an undertaking or other legal instrument;

2. "Assignment" refers to the act of assigning all the rights, title to and interest in intellectual property or proprietary information by the inventors, creator, or breeder to ISU through an undertaking or any other legal instrument.

3. "Assisted research" refers to any R&D activity supported in kind, wholly or partly, by ISU and/or agency undertaken by any person, or entity, private or public other than the ISU.

4. "Commercialization of intellectual property" refers to the deliberate effort to generate intellectual property for specific markets or commercial purposes and commercializing them through formal technology transfer arrangement as provided for in the IP Code.

5. "Contracted research" refers to any R&D activity supported financially and/or in kind, wholly or partly by the ISU and/or agency and undertaken by any person, or entity, private or public other than the ISU.

6. "Directed research" refers to any R&D activity undertaken by staff members of ISU and/or agency using ISU funds and resources.

7. "Generation of intellectual property" means the conduct of basic and applied researches focused in obtaining new knowledge and the production of new or improved technologies, products and processes.

8. "Holder" refers to a natural or judicial person who owns the rights to an IP at any given time.

9. "Intellectual property" or "intellectual property rights" is used interchangeably in these Guidelines. These terms refer to intellectual property or intellectual property rights that are relevant to ISU and/or agency such as: a) plant variety protection or plant breeders' rights; b) copyright and related rights; c) patents, utility models and industrial design; and d) other intellectual property rights such as but not limited to: 1) trademarks and service marks; 2) geographic indications; 3) layout-designs (topographies) of integrated circuits; and 4) protection of undisclosed information.

10. "Inventor", "Author", "Creator", or "Breeder" refers to the natural person who made substantial creative and intellectual contribution to the creation of the intellectual property be it an invention, a copyright, or a variety. Substantial creative and intelligent contributions include the conceptualization and planning of any activity resulting in the

creation and expression of the intellectual property or proprietary information.

11. "Other income" refers to income from activities other than normal business operations, such as investment interest, foreign exchange gains, rent incomes, and profit from the sale of non-inventory assets.

12. "Proprietary information" refers to information or data relating to technologies, creative works, discoveries, products and processes and improvements thereto, trade secrets, formula, ideas, varieties, lines, breeding materials, parental, which may not be formally protected through registration, but shall, nevertheless, be properly documented and recorded for protection. It includes all scientific, business or financial information relating to ISU, its R&D centers, programs, divisions, units, and in the future, subsidiaries or affiliates or their respective businesses.

13. "Protection of intellectual property" refers to the act of formally registering intellectual property with appropriate agencies to gain vested rights thereto, and, where registration is not required, the act of documenting the transfer of intellectual property or proprietary information to individuals or organizations for proper documentation and monitoring.

14. "Royalty" refers to payment made for the use of property, especially a patent, copyrighted work, franchise, or natural resource. The amount is usually a percentage of revenues obtained through its use.

15. "Technology Transfer Arrangements" as defined in the IP Code, refers to contracts or agreements involving the transfer of systematic knowledge for the manufacture of a product, the application of a process, or rendering of a service, including management contracts, and the transfer, assignment or licensing of all forms of intellectual property rights or proprietary information.

16. "Third party" refers to someone other than the principals directly involved in a transaction or agreement.

Section 5. **Obligations of those covered by these guidelines**

Aside from the duty to invent, create or breed, those covered by these guidelines whether individuals or colleges/centers where applicable shall have the following obligations:

1. Execute in favor of ISU colleges/centers, an Intellectual Property Undertaking containing the following minimum provisions:

    a. To comply with the ISU intellectual property policy and its guidelines;

    b. To disclose promptly to ISU any intellectual properly, which may be solely, or jointly discovered or generated with others in the performance of their regular duties, or with the use of ISU agency funds, facilities, or services;

    c. To perform all acts necessary to assist ISU in protecting and commercializing the

intellectual property;

d. To use the intellectual property or propriety information only in the performance of their duties to ISU; and

e. To use them in confidence and to employ all reasonable precautions to assure that they are not disclosed to unauthorized persons or used in an unauthorized manner, both during their employment or contract and for a period of five (5) years after their employment or contract with ISU;

2. Disclose to the ISU at least twelve (12) months prior to sale, offer, publication, presentation or communication to the public of any information on any intellectual property or proprietary information, through the Intellectual Property Disclosure form (Annex "B").

3. Ensure that all Memorandum of Agreements (MOAs) entered into by ISU, which may generate any intellectual property or proprietary information, shall contain the following clauses:

"Any intellectual property or proprietary information in the course of and as a result of the implementation of this agreement such as, but not limited to discoveries, inventions, varieties, works, database, information, reports, articles, research papers, research notebooks or records, tri-media presentations, and other project outputs, shall be subject to the ISU Intellectual Property Rights Policy and its Implementing Guidelines, and such other laws, rules and regulations on intellectual property, all of which are deemed incorporated into this agreement. All personnel involved in carrying out this agreement shall further be subject to such policies, rules and regulations."

4. Ensure that the use of any intellectual property or proprietary information by a third party shall be covered by a Material Agreement or a License Agreement.

5. Disclose any consulting or business engagement using any information on intellectual property or any proprietary information owned by ISU. Ensure that any arrangement involving intellectual property or proprietary information with any third party are authorized.

Article III - ISU-IPR Office

Section 1. **Creation of ISU IP Unit**

A central ISU IP Unit shall be created. It shall be responsible for the overall management, planning, implementing, monitoring of intellectual property, and evaluation of the IP-related activities of the university/department.

Section 2. **Powers and Functions**

The ISU-IP Unit shall have the following powers and functions:

1. To provide oversight supervision, guidance, and capacity-building on the IP Units of ISU, including but not limited to IP audit, preparation, filing, and prosecutions of applications for legal protection; and in handling technology transfer agreements;

2. To lead in the preparation, filing, and prosecution of IP registration;

3. To lead ISU in negotiating technology transfer arrangement such as but not limited to licensing agreements;

4. To collect royalties resulting from technology transfer arrangements and to manage and disburse the same in accordance with these guidelines;

5. To lead the ISU in contested proceedings affecting IPR of these agencies in coordination with their respective statutory counsels; and

6. To perform other functions to accomplish the purpose and objectives of these IP policy and these guidelines.

Section 3. **Funds for ISU-IP Unit**

For its initial operation, ISU shall allocate funds from its General Appropriations for the operation of the Unit. The Unit shall be there to operate through grants, endowments, royalties, and other internal and external funding sources received by it and kept on a separate account under an authorized government depository bank. The Unit shall disburse its funds in accordance with these guidelines and the existing government accounting and auditing rules and regulations.

Article IV - Plant Variety Protection

Subject to the provisions of the Plant Variety Protection Act of 2002 (Republic Act No. 9168), the following guidelines shall govern plant variety protection or plant breeder's rights at ISU;

Section 1. **Ownership of Plant Breeders' rights**

ISU shall have ownership of the new variety, which is bred, or discovered and developed by those covered by these guidelines, and those commissioned by it to do the breeding, or discovering and developing a new variety. If the ISU staff or the person commissioned by ISU breeds, discovers and develops a new variety together with two or more persons, all of them shall be named in the application for plant variety protection to be filed by ISU.

Section 2. Plant variety protection shall be sought and maintained by ISU for those varieties with high commercial potential. Protection shall be sought before any testing or commercial release of the new variety.

Section 3. If it is necessary to immediately disseminate the new variety for the benefit of the farmers, ISU may enter into exclusive licensing agreements with the private sectors,

provided the exclusive licensing agreement is done with transparency and competitiveness through a public bidding and will also bring about lower prices of seed of the new variety for the farmers.

Section 4. A new variety, whether propagating or harvested material shall not be sold, offered for sale or disposed off to others, by or with the consent of the breeder, for purposes of exploitation of the variety more than a year before the date of the filing for an application for plant variety protection.

Section 5. Germplasm may be provided by ISU to interested parties, provided the transfer of said germplasm is covered by a material transfer agreement.

Article V - Copyright and Related Rights

Subject to the Law on Copyright of the Intellectual Property Code of the Philippines, the following guidelines shall govern copyright and related rights at ISU.

Section 1. **Ownership and Assignment of Copyright**

ISU as an agency of the government of the Philippines, can not hold copyright but reserve its rights to require prior approval if its work is exploited for commercial purposes. However, it shall authorize its authors to individually/collectively hold copyright, if the same is generated as part of regular duties, with the use of funds, facilities, or services, and due to involvement with ISU and/or agency). The author shall assign copyrighted works to ISU.

Section 2. Copyright to outputs of collaborative works by ISU with other institutions shall be governed by these guidelines and the stipulations in the agreement.

Section 3. **Determination of authorship in cases of collaborative efforts among authors.**

1. Joint ownership resulting from contributions from different persons shall be determined as follows:

    a. By stipulation in the research contract;

    b. By application of the law on joint and/or sole ownership; and

    c. Through dispute resolution arbitrated by the IP Unit Head of ISU.

Section 4. **Terms and Conditions of Use of Institutional Works**

1. ISU users shall be covered by the undertaking to be executed by them prior to or during their employment or contract with ISU. They are automatically authorized to use ISU institutional works provided that the materials are properly cited and attributed.

2. Third party users shall be covered by a separate agreement including but not limited to the following terms and conditions.

- The agreement applies both to the user requesting the use of the material and the employer or organization for those programs the materials shall be used. The agreement takes effect once the works are obtained.

- The user must agree to a processing fee and the terms of payment as specified in the agreement. Fees, as determined by ISU, shall include but not limited to service charge, production fee, processing and handling fee and shipping fee, if necessary.

- All materials obtained from ISU are strictly limited to the listed restrictions in the agreement or others as specified by ISU.

- The period of use of the materials shall be specified by ISU and shall be stipulated in the agreement. Renewals or extensions in the use of the works shall be at the sole discretion of ISU.

- Agreements shall be terminated or cancelled upon failure to comply with the restrictions specified in the agreement.

- Media assets such as photos, graphics, and Power Point presentations can be copied, printed, or downloaded for purposes of integrating the assets into their own multimedia programs or for other research, educational and non-commercial purposes provided that they are properly attributed and cited. Copies of the programs shall be furnished to ISU for validation free of charge.

- Any alteration in publications such as news articles, books, bulletin, reports and artistic and literary works are not allowed. However, alterations for the purpose of improving the clarity, enhancing color, and cropping to maximize space, may be allowed by the ISU.

- The publications may not be used to infringe the copyright of any individual or organization. Users must ensure that the works will not be used for any unlawful, obscene, defamatory, or libelous acts. The user is liable for any damage caused to ISU and may enforce payment of such damages under applicable laws.

Section 5. Terms and Conditions of Use of Database or Information Systems

Databases or information systems which are unique forms of derivative works shall be governed by the following guidelines:

1. Prior approval from the ISU shall be required for any use of database or information systems;

2. A user shall not extract or re-utilize a database or contents thereof without prior approval of ISU or the copyright owner.

3. The user shall not distribute copies of the database or contents thereof to third parties

without authority from ISU.

4. A user shall properly attribute or cite ISU or author when using the database or content thereof for communication to the public.

Section 6. **Credit and Copyright Notice**

Any public display or distribution of media assets and databases requires the user to place a copyright notice, photo credit or any form of acknowledgement at the end of each work.

Section 7. **Confidentially**

Information that is proprietary or confidential in nature shall be covered by a confidentiality agreement before any use thereof by third parties.

Article VI - Patents, Utility Models and Industrial Designs

Subject to the law on patents, utility models and industrial designs as contained in Part II of the IP Code of the Philippines, the following guidelines shall govern patents, utility models and industrial designs at ISU.

Section 1. **Ownership**

1.1. ISU shall have ownership of patents or utility models or an industrial design in any of the following instances:

a. If commissioned by ISU;

b. If provided for in the contract to generate an IP;

c. If the inventor made the invention in the course of his contract with ISU;

d. If the invention is the result of the performance of the inventor's regularly assigned duties, unless there is an agreement, expressed or implied, to the country.

1.2. The ISU employees or all those covered by these guidelines, shall own the invention, utility model, or industrial design generated outside of his/her regular duties even if the employees uses the time, facilities, and materials of the ISU, subject to other existing laws, rules, and regulations on the use of government time, facilities, and materials.

1.3. The right of collaborators/external partners shall be based on the stipulations in the agreement between ISU and their partners.

Article VII - Other Intellectual Property Rights

The IP Code and its implementing rules and regulations shall govern the following other intellectual property rights: a) trademarks and service marks or trade names; b) geographic

indications; c) lay-out designs (topographies) of integrated circuits; and d) protection of undisclosed information. Proprietary information as defined in these guidelines falls under the category of other intellectual property rights.

Section 1. The ownership of other intellectual property rights shall be determined by any of the following:

1. By laws;

2. By contract;

3. By employment; and

4. By any other legal instrument.

Article VIII - Royalties and Benefits

Section 1. Based on the IP Code and the Magna Carta for S & T workers, inventors shall receive a percentage share of royalties and other benefits generated from their commercialized IPs subject to the following terms and conditions:

1.1. Royalties shall only be in the form of cash, and shall be allocated as follows:

- For ISU – owned IP : 40% (Inventor)
  60% (ISU); and
- For IPs owned by holders assigned to ISU : 60% (Inventor)
  40% (ISU).

1.2. The manner of payment of royalties shall be mutually agreed upon by the parties;

1.3. Percentage share from the royalties shall be collected from the proceeds of one (1) intellectual property. If there is more than one (1) related intellectual property licensed, the royalty shall be calculated for each and apportioned as stipulated in the contract. When there is more than one ISU inventors involved, the share shall be divided equally, unless there is a written agreement to the contrary;

1.4. The ISU investor's personal share survive termination of affiliation with ISU and in the event of death, shall accrue to his/her heirs, assignees, or successors-in-interest, in accordance with existing laws;

1.5. Awards, prizes, honoraria and the like received by ISU inventors primarily as recognition for achievement in the generation of the intellectual property shall not be considered royalty.

Section 2. In case of inability to locate the ISU inventor or his/her heirs within ten (10) years from the last publication of three notices in a newspaper of general circulation, his/her royalty percentage share including interest shall be deemed waived in favor of ISU.

Section 3. Where there is reasonable basis for believing that the royalty amounts may be refunded, or that others may have claim to such amounts, the payments thereof shall be deferred until the matter is resolved.

Section 4. Any person who has legal grounds for receiving any royalty, but who does not receive it, shall submit a claim in writing to the ISU or ISU IP Unit.

Section 5. Other incomes derived from the research shall not be considered royalty.

Section 6. **Collection of royalty**

The ISU IP Office shall collect and disburse any royalty resulting from commercialization of IP.

Article IX - Conflict Resolution

Section 1. In case of conflict arising from any of the provisions of this policy, the parties may agree to result to mediation to settle the dispute with the assistance of the ISU IP Office. The decision is appealable to the President of ISU whose decision shall be final.

Section 2. If the parties are not amenable to mediation, the parties may avail any remedy provided for by existing laws, rules, and regulations.

Article X - Transitory Provisions

Section 1. This party shall apply to existing agreements between ISU and any third party, with potential to generate intellectual property, subject to the conformity of the latter.

Section 2. If an existing agreement is renewed, revised or amended after the ISU policy takes effect, the amended or new agreement shall conform to this policy, or shall automatically be under the operative provisions of this policy.

F. Monitoring and Evaluation of R&D Performance, Outcomes, Effects and Impacts

The evaluation of R&D performance is quite difficult to evaluate due to the complexity of research and development programs, the period of evaluation as research extends for more than one semester, and the variation of researches according to research category. Though the performances of the research staff in the R&D services are complicated, Figure 4 provides the framework of the various program elements and the environment of R&D for M&E. A closer look at this framework shall prove helpful.

G. Guidelines on Financial Management of RDET Funds

1. Annual Budget Preparations

Institutional research and development and extension programs, projects and activities are funded through the Research and Extension annual allocations of the University as provided for in the General Appropriations Act (GAA). These fund allocations shall be exclusively and strictly be spent for the purpose they have been allocated. Graduate and undergraduate theses and special problems of students may be funded from University funds if these are within the scope of the approved institutional research thrusts and directions subject to the recommendations by the Dean, University Research Director and VP for RDET and approval of the President.

a. Emergency allocation of R&D funds

Emergency R&D funds shall be allocated for the conduct of researches and extension activities in response to urgent calls of emergencies which are beneficial to the University. Funding for such purpose shall also be made available to provide incentives to researchers, pool of experts and consultants who may be tapped to render expert services.

b. Fund sourcing for R&D programs and projects

Due to meager financial resources of the University, a more aggressive sourcing of funds from local or foreign research institutions and other funding organizations shall be given major concern by the R&D services. This is necessary to provide essential R&D services to target clients.

Where appropriate, legislations to create an equitable counterpart funding for R&D activities from the local governments should be pursued. This is especially true along the areas of technology generation and dissemination/commercialization to address prosperity, economic growth and development and social well-being.

The partnership arrangements, including funding support, with the private sector to include private Universities and Colleges, shall also be explored to enhance complementation of R&D programs and projects and save on costs.

2. Budgeting

a. Budget preparation and allocation

A budget preparation for R&D programs, projects and activities shall be done one year in advance, usually late December or early January when the Department of Budget and Management (DBM) issues a call. The annual budget preparation plan is made to translate the strategic R&D plan into operational plans.

An annual allocation of approximately 2.36 percent (2008 budget proposal) of the total budget from the general fund of the University has been allocated for R&D, the bulk of which is allotted to personal services.

b. Budget allocation from income for R&D programs and projects

On top of the general fund, however, a total of ten percent (10%) of the income generated from tuition fees, is also allotted to supplement the funds for R&D operations. These funds shall specifically be allotted for the implementation of institutionally approved R&D programs, projects and activities, incentives for research, extension and training personnel, winning best papers for R&D during agency in-house reviews, support to student theses/special problems under special cases, research publications, and support for paper presentations in international conferences, and related programs, projects and activities.

A policy and guideline for cooperation, coordination, co-financing and budgeting of interphase activities to bridge the functional gaps in and among research and development, extension and knowledge management services shall be developed.

c. Participative and transparent budgeting

Budgeting for R&D programs and projects should be participatory and transparent following the general budget planning pathway that should start from the departments to the colleges, campuses, clusters, and University Budget Management Office.

3. Accounting and Auditing

a. Auditing manual for research operations

For accounting and auditing procedures, the Accounting and Auditing Manual for Research Operation (AAMRO) Book 1 shall be strictly enforced.

R&D funds are generally handled by the Central Administration and Books of Accounts shall be kept by the Accounting Division. However, a separate book of accounts shall be kept by the Office of the R&D Director. At the end of the month, the two books of accounts shall be tallied for a more effective financial management. A copy of the NCA shall be furnished to the Offices of the University R&D Directors for information and monitoring purposes. In addition, the R&D Coordinators of colleges, component campuses and cluster campuses should be able to keep tract of the total collections and disbursements of R&D funds from income.

b. Continuing appropriations for R&D funds

Pursuant to DBM issuance dated February 10, 1992, fund allocations for R&D shall be treated as continuing appropriations with the condition that the unutilized funds for the said activities at the end of the year of release shall be valid only up to the end of the month of the ensuing year and the disbursement therefrom shall be subject to usual

accounting and auditing rules and regulations.

c. Bookkeeping

For special projects, the bookkeeper of the Office of the Vice President for R&D shall handle such funds, subject to accounting and auditing rules and regulations.

d. Accounting of R&D Resources

The R&D Department shall follow appropriate government circulars governing the proper monitoring and evaluation, recording and reporting of R&D assets such as crops, animals, fishery products, forestry products, buildings, laboratories, equipment, tools, etc. produced or acquired by the University either through its regular or special R&D

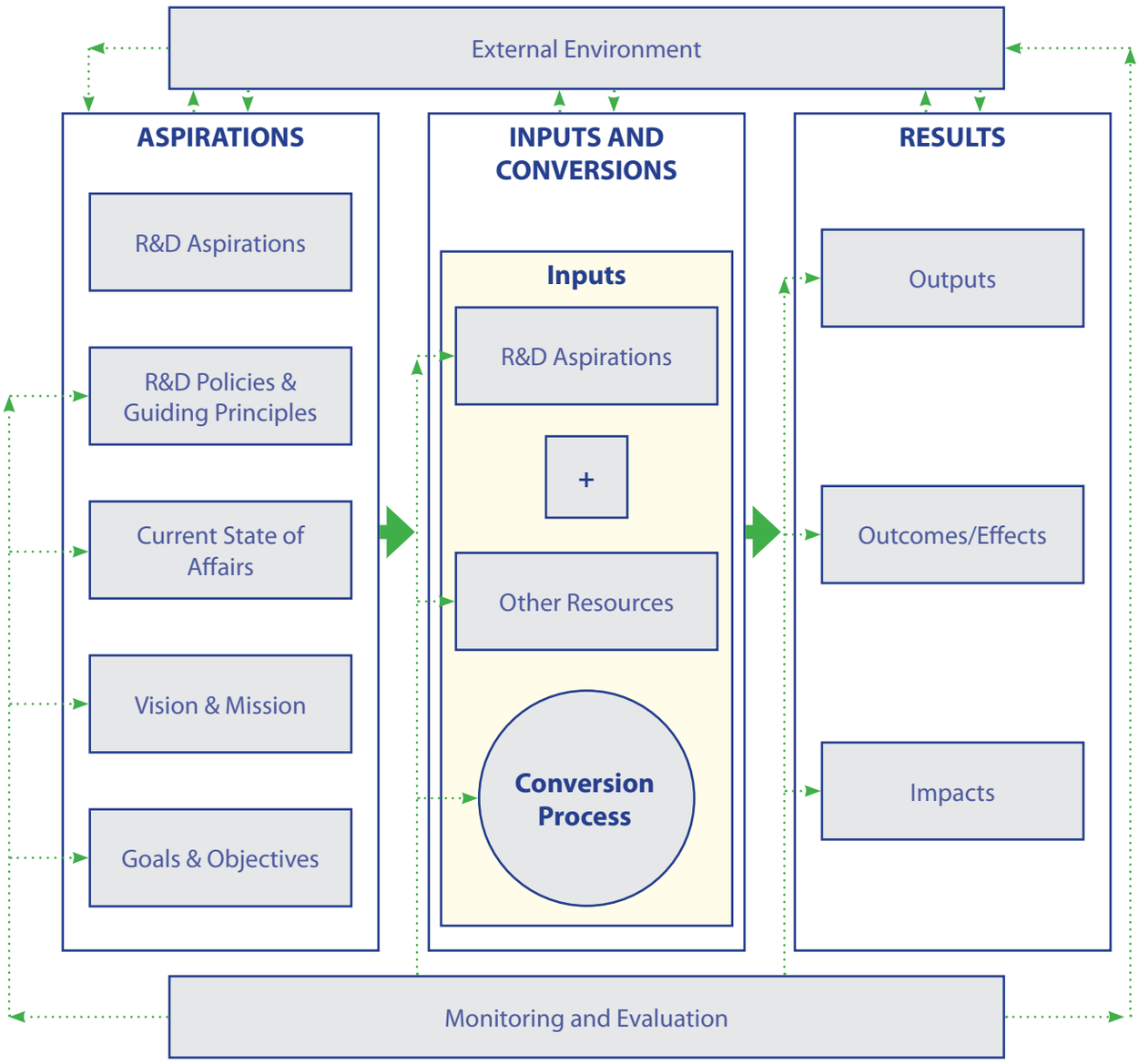


Figure 4. Framework of the various program elements and the environment of R&D.

programs and projects.

H. R&D Program Elements and Environment

Like other programs, the management of R&D has four major elements: (1) program aspirations and identification of needs; (2) program inputs and activities; (3) program results; and (4) program monitoring and evaluation. The interrelationships of these elements and they interact with the environment are shown in Figure 4 below. Each of these are briefly discussed in the following sections.

1. Program Aspirations and Identification of Needs

Comparable with any research-oriented institutions, the development of R&D programs at ISU emanates from ISU's aspirations, vision and mission, guiding principles and policies, current state of affairs and goals and objectives.
Aspirations, vision and mission, guiding principles and policies and goals and objectives answer what the research institution wants of its R&D programs.

The current state of affairs reflects the current situation and condition of the ISU in terms of the various factors that affect it and how the institution can satisfy the needs of the program. However, the institutions' aspirations and needs are vertically integrated and they range from ISU's R&D dreams and ambitions.

Based on the goals and objectives which are guided by some institutional principles and policies, the current state of the institution's R&D programs, current and expected RDET requirements and availability of financial resources, specific R&D programs and activities are quantified and determined.

2. Program Inputs

R&D program inputs consist of the manpower and the other resources that are needed for the purpose of attaining the R&D program objectives while R&D program activities are actions undertaken in order to execute and implement the program plans.

3. Program Results

The results of the R&D program can be classified into three major categories: (a) program outputs, (b) program effects, and (c) program impacts.

Program outputs are the physical outcomes produced by the program and measurements of services provided. Program effects are the direct and immediate consequences of the program.

Program impacts are the changes in the environment as may be brought about by the program.

4. Program Monitoring and Evaluation

Program monitoring and evaluation has something to do with the examination of the various program components or elements to determine as objectively as possible the relevance, efficiency and effectiveness of the R&D programs in the context of the program objectives. Several approaches towards this end include the evaluation of the University Directors, colleagues and peers, clients and external evaluators.

Of the very interesting elements of evaluation in the R&D programs are the intermediate impacts of results in terms of the project goals and objectives which are reflective of the performances of the R&D program/project faculty, staff and other support personnel.

5. External Environment

As in the case of other development programs, the R&D programs do not operate in a vacuum or is it limited to the academic environment, or to ecological ones, or to politico-administrative factors; instead it combines these and other factors which it seeks to influence and which influence it. These set of factors is termed the "R&D program environment."

APPENDICES

Appendix 1
R&D Clusters along Priority Thematic Thrusts

Republic of the Philippines
Isabela State University
Echague, Isabela

OFFICE OF THE PRESIDENT

ISU SO No. 01
Series of 2012

TO : **ALL CONCERNED**

FROM : **OFFICE OF THE UNIVERSITY PRESIDENT**

SUBJECT : **PROPOSED CREATION OF R&D CLUSTERS TO WORK ON PRIORITY THEMATIC THRUSTS**

To strengthen and operationalize the research function of the University and to increase research output and productivity and significantly contribute to the development of the Region and the country, you are hereby directed to compose the R&D Clusters by Priority Thematic R&D Thrusts created as follows:

1. **Smart/Precision Agriculture and BioTech Cluster**
   - Chairperson: Dr. Orlando F. Balderama (Echague)
   - Co-Chairperson: Dr. Jonathan N. Nayga (Echague)
   - Members: Dr. Nilo E. Padilla (Echague)
     Engr. Jeoffrey Lloyd R. Bareng (Cabagan)
     Dr. Jane G. Cabauatan (Cabagan)
     Dr. Lito S. Guzman (Cabagan)
     Dr. Helen C. Ramos (Echague)
     Prof. Precila C. Delima (Cauayan)

2. **Organic Agriculture Cluster**
   - Chairperson: Dr. Joel L. Reyes (Echague)
   - Co-Chairperson: Dr. Artemio A. Martin, Jr. (Echague)
   - Members: Dr. Florence T. Acay (Cabagan)
     Prof. Raul B. Palaje (Cabagan)
     Prof. Mary Ann S. Silvestre (Cabagan)

3. **Renewable Energy and Biofuels Cluster**
   - Chairperson: Dr. Ramon Velasco (Echague)
   - Co-Chairperson: Dr. Juanito P. Rosini (Echague)
   - Members: Dr. Eileen C. Bernardo (Cabagan)
     Engr. Sabas V. Lazaro (Echague)

Dr. Eva U. Cammayo (Echague)
Dr. Danie T. Sayo (Echague)

4. Climate Change and Disaster Science Cluster

Chairperson: Dr. Januel P. Floresca (Echague)
Co-Chairperson: Dr. Marino R. Romero (Cabagan)
Members: Prof. Myrna T. Ramos (Cabagan)
Prof. Cecilia B. Mangabat (Cabagan)
Engr. Jose Felipe P. Romero (Echague)

5. Biodiversity and Environment Cluster

Chairperson: Dr. Dante M. Aquino (Cabagan)
Co-Chairperson: Dr. Tomas C. Reyes (Cabagan)
Members: Dr. Celia R. Ualat (Echague)
Dr. Oliva C. Ruma (Echague)
Prof. Miriam D. Macutay (Echague)
Prof. Jouel B. Taggueg (Cabagan)

6. Farm Mechanization Cluster

Chairperson: Dr. Joel M. Alcaraz (Echague)
Co-Chairperson: Dr. Romeo B. Seguban (Ilagan)
Members: Dr. Samuel R. Simon (Cabagan)
Dr. Oscar G. Bangayan (Angadanan)
Engr. Emmanuel B. Santos (Echague)

7. Socio-Economics and Higher Education

Chairperson: Dr. Alberto R. Domingo (Echague)
Co-Chairperson: Dr. Pedrita N. Medrano (Echague)
Members: Dr. Eliza P. dela Cruz (Echague)
Dr. Nilda T. Aggabao (Cabagan)
Dr. Jaine Z. Tarun (Cabagan)
Dr. Adora B. Ammugauan (Cabagan)
CTE Research Coordinators (Cauayan, Ilagan, Roxas)

TERMS OF REFERENCE (TOR)

Each of the Clusters will develop and package R&D/E Programs in the assigned Thematic Thrusts. Among their terms of reference are the following:

1. To gather recent existing related literatures and other relevant information as inputs in the formulation of the programs;
2. To gather information on pressing problems/concerns that may be addressed by an Integrated RDET program;
3. To design and develop an integrated multidisciplinary R&D program within the assigned Cluster; and
4. To meet regularly (or as the need arises) to deliver the expected outputs.

In case the proposed RDET program requires the involvement of expertise from other Clusters or Disciplines, this will be provided upon request direct to the Chairperson concerned. The involvement of other faculty members who are not included in the Clusters but whose expertise are needed, may also be requested to the Office of the President through the VP RDET Office.

Each of the proposed integrated RDET programs will be packaged for submission to national or international sources of funds.

LOGISTICS

Each Cluster shall prepare a Program of Work (with Timetable and Financial Requirements) in the pursuance of their respective Terms of Reference (TOR). These shall be the basis of the VP RDET office in allocating funds and in monitoring the progress and performance of each Cluster.

EFFECTIVITY

This University Special Order shall take effect immediately and shall be in force until revised or revoked by the Office of the President. Likewise, this Order formalizes the Designations of the aforementioned University faculty and personnel.

So ordered.

Issued this 22nd day of November 2012.

ALETH M. MAMAUAG, Ph.D.
University President

Appendix 2
ISU Research Agenda

THEMATIC (cum COMMODITY)–BASED THRUSTS		PRIORITY RESEARCH AGENDA
A. Precision (Smart) Agriculture		
	Rice and corn	Harnessing ICT (remote sensing, AWS, GIS, simulation models) for agriculture, fisheries and natural resources
		Development of decision support systems for farm forecasting/early warning systems
	Aerobic and Upland rice	Improving production system (land, water, labor, inputs)
		Optimization of diversified farming system
	Industrial crops (Rubber, Sugar cane; cacao); Tropical fruits	Gene banking and propagation of planting materials
		Varietal adaptability trials across agroecological zones
		Bio-innoculants for production, disease control and waste water treatments
		Treatment of effluents and waste water from bio-ethanol plant
		Irrigation water management
		Spatial monitoring of production areas through IT applications
		Development of tissue culture protocol for rubber
B. Organic Agriculture		
	Banana	Production of disease-free planting materials through tissue culture
		New product processing and value adding for Saba banana
		Development of production technologies of organic and dwarf banana

THEMATIC (cum COMMODITY)–BASED THRUSTS		PRIORITY RESEARCH AGENDA
	Rice, Corn, Legumes (Mungbean, Peanut) & indigenous vegetables	New product processing and value adding
		Designing machineries (Mungbean sheller, miller, grinder, Peanut harvester)
		Analyzing value chain & socio-economics
		Collection, characterization, and conservation of indigenous vegetables
	Root crops (Cassava, Sweet potato, Yam)	Production of planting materials
		New product processing and value adding
		Germplasm collection and conservation
		Adaptability trials of HYVs
		Development of propagation techniques
	Indigenous plants for health and wellness	Inventory, identification & documentation of indigenous plants at the Northern Sierra Madre Natural Park (NSMNP)
		Documentation of indigenous health practices of indigenous peoples (bioscoping)
		Isolation, characterization of native chemicals of indigenous herbal plants
	Native animals (Chicken, pig)	Identification, conservation & germplasm development for organic production
		Development of herbal anthelmintics
A/B. Precision (Smart) / Organic Agriculture		
	Dryland crops (Pigeon pea, peanut, sweet sorghum)	Germplasm collection
		Varietal trials
		Production of planting materials

THEMATIC (cum COMMODITY)–BASED THRUSTS		PRIORITY RESEARCH AGENDA
	Small ruminants (Goat, Sheep)	Product development standardization and commercialization
		Genetic improvement for organic production
		Development of artificial insemination techniques for sheep; biotech on breeding, disease and feeding
	Large ruminants (Dairy cattle, carabao)	Germplasm collection, conservation and improvement of native carabaos
		Development of automated feeding systems
C. Fisheries/Aquaculture		
		Development of low-cost feeding systems
	Tilapia/Hito/Ulang	Evaluating water quality and fish productivity
		Establishment of protocols for natural breeding, nursery of fingerlings
		Development of early warning and decision support systems
		Development of new processed products
D. Farm Machineries, Metal craft, Electronics and Semiconductors		
		Designing automated machinery and mechatronics for agriculture and fisheries
		Design, fabrication and testing of farm machineries and equipment for:
		• Rice: rice hull automated loader; grain collector
		• Sugar cane/Sweet sorghum: crusher, expeller;
		• Cacao: toaster, grinder;
		• Animals: (low-cost milking machine, forage harvester, rice straw baler, pelletizer, etc.)

THEMATIC (cum COMMODITY)–BASED THRUSTS	PRIORITY RESEARCH AGENDA
	• Aerobic rice: Precision seeder cum fertilizer application
	• Bamboo: tile maker, slicer
	Development of electronic/automated (rapid) test kits for smart/precision agriculture, soil, water and biodiversity monitoring, and other applications
E. Watershed and Biodiversity	
	Evaluating the dynamics of biophysical and social parameters in terrestrial and aquatic ecosystems
	River basin environmental R&D
	CC Vulnerability of watersheds and coastal areas
	Development of bamboo production, processing and value adding technologies
	Soil and water resources management, and biodiversity conservation through wise use
	Drug discovery and development from indigenous plants of the Northern Sierra Madre Natural Park
	DNA barcoding of flora and fauna
	Application of DNA barcoding for biodiversity assessment
F. Higher Education and Social Science	
	Academic benchmarking studies
	SUC leveling preparedness studies
	Studies on Normative funding adequacy and readiness
	Studies on rationalization of tuition and other fees

THEMATIC (cum COMMODITY)–BASED THRUSTS		PRIORITY RESEARCH AGENDA
		Studies on cost efficiency of academic programs
		Technology commercialization and extension programs impact studies
		Value chain & socio-economics studies
		Benchmarking and Impact assessments studies
		Development of IT applications in higher education: e-learning, database management
		Graduate tracer studies
		Gender and development studies
		Socio-Cultural studies
		Assessment of Institutional Readiness and Outcome of K-12 Program
G. Disaster Risk Reduction and Management		
	Hydrometeorological hazards in Cagayan River Basin and Island Communities	Developing climate change resiliency/ adaptation strategies & technologies
		Development of DSS for flood, landslide and drought forecasting
		CCA vulnerability assessment of coastal and island communities
		Treatment of effluents and waste water
		Capacity building and institutional development
		Assessing environmental impacts of water-related projects
		Development of rapid test kits for soil and water monitoring

THEMATIC (cum COMMODITY)–BASED THRUSTS		PRIORITY RESEARCH AGENDA
	Climate Change Adaptation Strategies	Development of Decision Support tools for soil water conservation and resources optimization
		Design and Installation of water harvesting systems
		Climate Monitoring and Forecasting
		Capacity Building and Institutional Development
		Climate Change Vulnerability Impact Assessment
		Developing Strategies for CCA and DRRM in Cagayan River Basin (agriculture, aquaculture, forestry, etc.); Development of green architecture/design for animal housing
	Policies, Development Strategies and Institutions for CCA & DRRM	Establishment of Center for CCA and DRRM for Education, Research and Development
H. Renewable Energy		
	Microhydro	Design of turbines and load controller
		Piloting and Commercialization
		Capacity Building
	Solar Energy	Developing climate change resiliency/ adaptation strategies & technologies
		Solar Energy for agriculture and domestic application
		Resources Assessment
	Biomass and Biofuel	Design of community-based equipment and facilities
		Resources assesment
		Piloting and Commercialization
		Assessing environmental impacts

R&D Support Systems: Institutional Development, Knowledge Management, and Support Services

√ Capacity Building	√ Research Facilities Development/ Establishment:
√ Intellectual Property Rights (IPR) Management	• Establishment of Center for CCA and DRM for Education, Research and Development
√ Research Facilities Upgrading	• Food Processing Laboratory
• CVARRD Complex	• Machinery Testing Laboratory
• Regional Cacao Development Center	• GIS and Remote Sensing Laboratory
• Affiliated Renewable Energy Center	• Renewable Energy Technology Demo Complex
• Center for Cagayan Valley Program on Environment and Development	• Indigenous Plants and Natural Products Laboratory
• Equipment Manufacturing Center	• Animal Genetic Resource Laboratory
• Cagayan Valley Small Ruminants Research Center	• Regional Animal Disease Diagnostic Laboratory
• Dairy Cattle and Dairy Buffalo Training Center	• Aquaculture Research Laboratory (Roxas)
• Climate Change Center	• Organic Agriculture Laboratory
• Tropic Fruits Gene Bank and Regional Nursery	• Water Resource Center
• Tissue Culture Laboratory	• Apiculture Laboratory (San Mateo)
• Meat Processing Laboratory	• Molecular Biology Lab. (Cabagan)
• Regional Artificial Insemination Center	• Bamboo craft laboratory (Cauayan)
• Soil, Water and Plant Tissue Analytical Laboratory	• Automation Laboratory (Angadanan)
	• Educational Software lab (San Mateo)

R&D Support Systems: Institutional Development, Knowledge Management, and Support Services

√ Capacity Building	√ Research Facilities Development/ Establishment:
√ Intellectual Property Rights (IPR) Management	• Establishment of Center for CCA and DRM for Education, Research and Development
√ Research Facilities Upgrading	• Food Processing Laboratory
• CVARRD Complex	• Machinery Testing Laboratory
• Regional Cacao Development Center	• GIS and Remote Sensing Laboratory
• Affiliated Renewable Energy Center	• Renewable Energy Technology Demo Complex
• Center for Cagayan Valley Program on Environment and Development	• Indigenous Plants and Natural Products Laboratory
• Equipment Manufacturing Center	• Animal Genetic Resource Laboratory
• Cagayan Valley Small Ruminants Research Center	• Regional Animal Disease Diagnostic Laboratory
• Dairy Cattle and Dairy Buffalo Training Center	• Aquaculture Research Laboratory(Roxas)
• Climate Change Center	• Organic Agriculture Laboratory
• Tropic Fruits Gene Bank and Regional Nursery	• Water Resource Center
• Tissue Culture Laboratory	• Apiculture Laboratory (San Mateo)
• Meat Processing Laboratory	• Molecular Biology Lab. (Cabagan)
• Regional Artificial Insemination Center	• Bamboo craft laboratory (Cauayan)
• Soil, Water and Plant Tissue Analytical Laboratory	• Automation Laboratory (Angadanan)
	• Educational Software Lab. (San Mateo)

Appendix 3 -ISU R&D PROPOSAL FORMAT

PART 1 (Cover Summary)

1.0 Title:

2.0 Proponents:

3.0 Implementing Campus:

4.0 Project Duration:

5.0 Project Location:

6.0 Total Budget Requirement:

PART 2 – Technical Description

1.0 Title

2.0 Rationale

3.0 Objectives

4.0 Review of Literature

5.0 Methodology

6.0 Expected Outputs

7.0 Literature Cited

8.0 Workplan Schedule

9.0 Program Design Matrix

10.0 Budget Summary

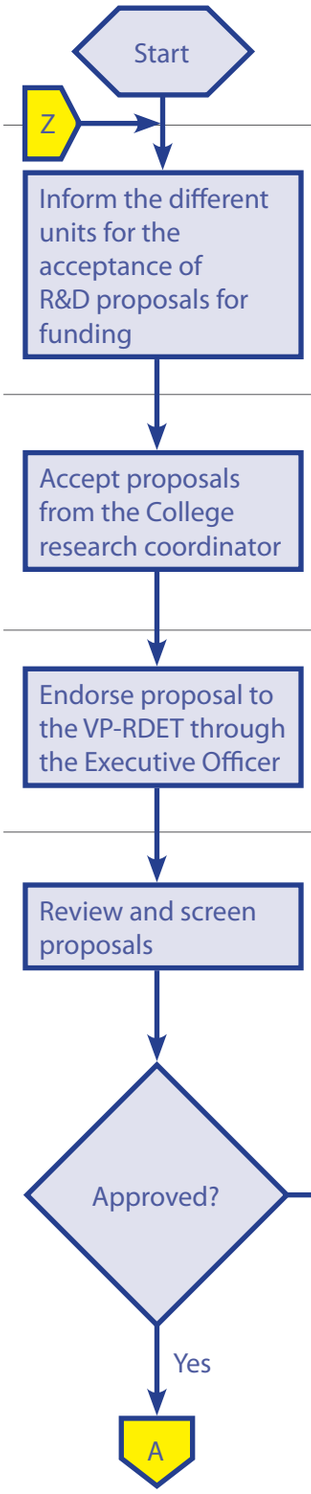
11.0 Worksheet Details on Personnel Services (separate form)

12.0 Worksheet Details on Expenses (separate form)

13.0 Worksheet for Equipment (separate form)

Prepared by: *Study/Project Leader* *Date:*	*Reviewed and Approved by:* *University Evaluation Commitee* *Date:*

Appendix 4. Research and Development Flowchart for R&D Projects / Proposal Evaluation

Activity	Person/s Responsible	Details / Functions	Timetable	Reference/s
	• VP for RDET	• Issues letter/ memo to all campuses/units to submit R&D proposals for funding.	June	• Memorandum • Letter
	• Campus Research Director • University Research Director	• Accepts and conducts preliminary review of proposals as to proper format.	June -July	• Submitted proposals • RDET Manual
	• Research Director	• Endorses proposal to the VP-RDET through the Executive Officer	July	• Endorsement Letter
	• University Expert Pool (UEP)	• Reviews and screen proposals as to quality and relevance • Recommends to the VP-RDET through the URDET and CURDETC proposals to be developed into detailed proposals	July-August	• Proposal • RDET Manuak

Activity	Person/s Responsible	Details / Functions	Timetable	Reference/s
A ↓ Inform and advice proponents to revise proposals	• URDET Director • VP for RDET	• Informs proponent through the URDET Directors of approved capsule proposals and issues the Advice to Proceed (AP) to develop detailed proposal	August	• Memorandum
↓ Accept detailed revised proposals from proponents	• URDET Director • VP for RDET	• Accepts packages and recommends for approval • Technical Working Committee (TWC)	Sept.-Nov.	• Approved proposal
↓ Approve proposals for implementation	• URDET Council	• Issues Advice of Allotment (AA) and Notice to Proceed (NP) to proponents.	December	• Notice of approval
↓ Prepare legal agreements and appointment of proponent/s	• VP for RDET	• Prepares legal agreements and initials appointment of proponents for the President's signature	January	• Appointment
↓ Monitor and evaluate the conduct of the research	• University Director for Research • RDET Monitoring Team	• Monitors and evaluates the conduct of research	Jan.-Dec.	• RDET Manual
↓ B				

Activity	Person/s Responsible	Details / Functions	Timetable	Reference/s
B Require submission of progress report and presentation to In-house reviews	• VP for RDET • University Director for Research	• Issues notice to submit and present report • Accepts and evaluates submitted report	End of Every Quarter	• Memorandum • Letter
Require submission of terminal report and manuscript for publication	• VP for RDET • University Director for KTM	• Issues notice to submit manuscript	Oct.-Nov.	• Memorandum • Letter
Publish Research Journal	• VP for RDET • University Director for KTM	• Issue notice to submit manuscript • Consolidates and edits submitted manuscript • Prints the journal • Distributes/ disseminates printed journals to different colleges, library, reading rooms, and so forth	December	• Manuscript
End				

Appendix 5

ISU R & D Form A-Monitoring and Evaluation Forms for Completed Research and Development Services

Campus: _____
Period Covered: _____

A. Summary Sheets

Key Result Area (KRA)	Output	Accomplishment	Quarterly Targets				Remarks
1. Research Conducted/ Completed on Time							
2. Paper Presented in Regional, National, International fora/ conferences							
3. Research Outputs Published in CHED Accredited Journal/Internationally Indexed Journals							
4. Research Output Cited in refereed international or national journals and books							
5. Patents/Copyrights							
6. Research Outputs Utilized/Commercialized							
7. Amount of R&D funds generated from external sources							
8. No. of R&D Awards/ Recognition Received (Individual, Institutional)							

Prepared by:

_____
Campus Research Director

Submitted by:

_____
Campus Executive Officer / Administrator

Appendix 5

ISU R & D Form B-Monitoring Sheets per KRA

B1. Research Conducted/Completed on Time

No.	Research Title	Authors	Unit	Budget	Duration	Date and Venue of Presentation (Campus/Univ. In-House Review)

B2. Paper Presented in Regional, National, International fora/conferences

No.	Research Title	Authors	Conference/ Symposium/ Seminar	Date	Venue	Category

B3. Research Outputs Published in CHED Accredited Journal/Internationally Indexed Journals

No.	Paper Title	Author/s	Title of Book /Journal	ISBN/ISSN	Vol./No./ Page	Category	Date of Publication

B4. List of Research Outputs listed in refereed international or national journals and books

No.	Title of Published Article	Author(s)	Title of Journal/ Book	Vol./No./Page	Classification	Date of published

B5. List of Patents Applications/ Approved

No.	Inventor/s	Type of Intellectual property	Name of Product	Application/ Registration No.	Certifying body/ agency	Date of Application/ Approval

B6. List of Research Outputs Utilized / Commercialized

No.	Name of Patented Product/Technology	Inventor/ Author	Type of Intellectual Property	Business Firm/ Entrepreneurs	Beneficiaries/ Impact

Note: All documents i.e. hardcopies of papers, Xerox copies of certificates, MOA/MOU, pictures of plaques, projects notice to proceed, etc. should be attached.

For all M&E, it should indicate below the following

Prepared by:_____
Campus Research Director

Certified Correct by: _____
Campus Head

Appendix 5

ISU R & D Form C & D-PROGRESS REPORT FOR ON-GOING R&D PROJECTS & OTHER RELATED ACTIVITIES CONDUCTED

C. PROGRESS REPORT FOR ON-GOING R&D PROJECTS

	Classification	Researchers/ Faculty involved	Budget Allocation	Duration		Funding Source	Status	Expected date of completion
Title of Research	(program, project, study)							
				Start	End			
1.								
2.								
3.								

D. OTHER RELATED ACTIVITIES CONDUCTED (i.e trainings, review, contest, etc.) WITH PHOTOGRAPHS

Prepared by:_____
Campus Research Director

Certified Correct by: _____
Campus Head

Appendix 5

ISU R & D Form E- SUMMARY ACTION/IMPLEMENTING PLANS

R & D PROGRAM FOR CY_____

Projects COMPONENTS R&D Projects/ Study Titles	KEY RESULT AREA (Expected Output)	TIME TABLE	UNIT/COLLEGE ASSIGNED	LEAD PERSONS/ RESEARCHERS	Approved Budget and Source (SB, GA, Special)
1					
2					

Prepared by:	Noted by:	Certified by:	Recommended by:	Approved by:
_____	_____	_____	_____	_____
R&D Coord.	Budget Officer	CEO/CA	Vice President, RDET	President, ISU

Appendix 6

ISU R&D Calendar

Activities	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Pre-In-House Review in Campuses						■	■					
2. Agency In-House Review (all campuses)							■					
3. Regional R&D Symposium (CVAARD)								■				
4. Search for Best Undergraduate Thesis (by campus and cluster)		■	■	■								
5. Search for Best Undergraduate Thesis (University wide)				■								
6. Quarterly Planning, Management and Operations meeting with Campus Research Directors + Field visits. URDET Council Quarterly Meeting.	■			■			■			■		
7. Submission/ Presentation of New Research Proposals and Budget Hearing	■										■	■
8. Continuing Education for Researchers		■	■	■				■	■	■		
9. Monitoring of Inter-campus cooperative research projects	■	■	■	■	■	■	■	■	■	■	■	■
10. Preparation/Updating of Reports to MIS, CHED, DBM, Congress, PASUC. Year-end Univrsity Review and Planning Workshop for RDET.	■	■	■	■	■	■	■	■	■	■	■	■

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