Pangasinan State University' Manual for Sustainability

PANGASINAN STATE UNIVERSITY
PILIPINAS
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1 Introduction and Objectives

The Pangasinan State University adheres to the United Nations Sustainable Development Goals specifically No. 10, reduced inequality, No.11, sustainable cities and communities, and No. 12, responsible consumption and production through its 5th Core Values, Social and Environmental Responsiveness. The manifestation of the 5th Core Values is the achievement of the Strategic Goal no. 3, good governance, of the university.

The PSU translates the above through its strong commitment including its stakeholders to engage in environmental sustainability. Specifically, it seeks to:

- Mainstream sustainable development at all levels and units, integrating economic, social and environmental aspects recognizing interlinkages, hence, a major consideration in planning and decision-making in the campuses, the university and the larger society;
- Manage health and safety hazards and minimize disaster risk due to global warming, climate change, other geo-hazards, and other environmental impacts in and out of the campuses and university as a whole.
- Meet the future generation's needs by managing wisely the university's resources and exercise the need to reduce inequality and inequity innovatively.

2 Pangasinan State University's Manual for Sustainability

This Pangasinan State University's Manual for Sustainability provides basic processes and directions towards implementing it as well as a respond to improving the university's operations through systems thinking, commitment, and good governance.

Sustainability begins with planning for systems that promote efficiency, the optimization of the use of resources, the reduction of pollution and management of wastes in any event, process, or structure in the campuses and the university as a whole.

- The observance of sustainability involves the use of suppliers, contractors and service providers whose organizations observe environmental friendly practices and sustainable development principles.
- Practicing sustainability results to major advantages:
  Improved brand image and competitive advantage, increase productivity and reduce cost, increase business ability to comply with regulation, attract employees and investors, reduce waste, make stakeholders happy.
- The preparation of the university's report relative to sustainability would reflect and document the direction, effectiveness and efficiency of various sustainable development efforts.

The implementation of this manual enjoins the stakeholders through research, extension and innovation i.e. raising their awareness and by supporting programs that study clean, renewable, and/or resilient systems, bring about lifestyle change, and transfer technology to partner organizations and communities, among others.

3 Guide in the Implementation of this Manual

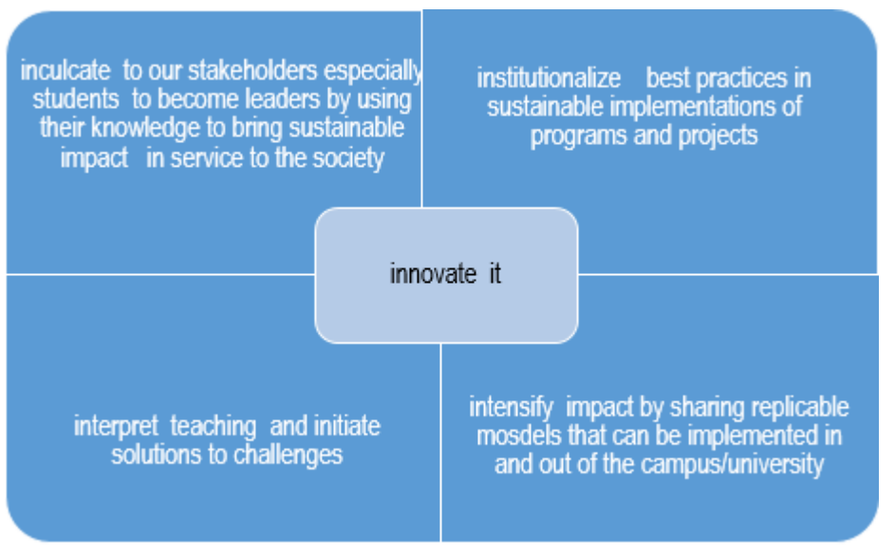
3.1 Establish a culture of sustainability

The university is committed to develop a culture of sustainability among its stakeholders to ensure quality through its main functions, instruction, research, extension, and production. Moreover, the university adopts systems thinking as the process of understanding how things influence one another within a whole. In nature, systems thinking examples include ecosystems in which various elements such as air, water, movement, plants, and animals work together to survive or perish. In the workplace, Peter Senge, American systems scientist said that systems thinking is a discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing 'patterns of change' rather than static 'snapshots'.

In this culture of sustainability, faculty and staff members meet challenges head-on and not hide from it. This is the power of systems thinking. It empowers the entire organization to think of challenges as exciting opportunities to be innovative. In systems thinking, blaming does not exist. Instead, teams begin to view failure as simply part of the learning process. Initiatives and innovations like adaptive capacity,

		future proof-continue to be useful even the situation changed, and ethically conscious with respect for God's creation.
		• The PSU adopts sustainability principles (payoff, people, and planet), initiatives, and innovations in its academic programs, research and extension agenda, production in collaboration with industries, commercial and communities

		• Promoting sustainability among stakeholders through various activities :
		  • Online or face to face fora, lectures, seminars, workshops, and conferences
		  • On-the-job, practicum, service learning of students
		  • Programs/projects, various instructional materials and models, research, extension and technology innovations, production, communication and advocacy

		• Technical and administrative support to various sustainable initiatives and innovations increase sustainability awareness and enable changes in institutional lifestyle.
		• Every PSU campus sustainability initiatives and innovations are an indirect way to reduce disaster risk because these contribute to the reduction of carbon and water footprints, as well as to the increase of biodiversity, and facilitating the biogeochemical cycles.
	3.2	Basic Steps of a Continued Culture of Sustainability *Articulate* the vision (compliance, environment, sustainability) *Identify* and gather data on how operations affect the environment *Understand* what legal and other requirements apply *Prioritize* what to work on *Establish* your measures *Set Goals* to be met *Manage* your most significant issues *Document* what you are doing *Track* progress *Check* if your system is working *Learn* from your efforts *Improve*
	3.3	Adoption of Campus Sustainability Design
		One manifestations of culture of sustainability is the Campus Sustainability Design (CSD). The CSD is a campus future-proof plan with the incorporation of all mitigations and adaptations to all possible unlikely events. This CSD builds off of the hereunder framework.
	3.4	Campus Sustainability Design Framework
		
	3.5	University Sustainability Board and Campus Sustainability Committee

			The university shall create a university board for sustainability to achieve a sustainable university responsive to the United Nations Sustainable Development Goals. The board named University Sustainability Board (USB) will oversee the achievement of 1.1. goals through the campuses. The USB is composed of the following: University President – Chairperson Vice President for Administration –Co-Chairperson Vice President for Planning and Finance Vice President for Quality Assurance Vice President for Academic Affairs Vice President for Research, Extension, and Innovation Chief, Administrative Officer Director, Procurement Services Director, Quality Assurance Director, General Services Director, Income Generating Projects Director, Engineering Services Director, Supply Management Heads, Maintenance Units Head, Pollution Control Unit Representative from Campuses (as needed) The counterpart of the USB at the campus level is the Campus Sustainability Committee (CSC) whose members composed of: The Campus Executive Director Administrative Officer Supply Officer Income Generating Project Coordinator Campus Pollution Officer Laboratory Custodian Representative per Department Representative from Utility To achieve these goals, the University will put in place the necessary programs and strategies to promote and implement energy conservation and efficiency, efficient use of materials, and waste reduction, by engaging all of its stakeholders.
4	Areas of Sustainability		
	4.1		Green Planning and Procurement
			• To encourage sustainable use of resources and reduce impacts on the environment and health, all administrative and academic units shall plan and purchase recycled and environmentally preferable products and services whenever practicable.
			• The university shall require contractors and consultants to use recycled and environmentally preferable products whenever possible.
			• When assessing and comparing products and services, the following guidelines shall apply:
			Products and services that promote pollution prevention, waste reduction, and diversion – products that are easier to recycle and repair, products that facilitate disassembly for refurbishment and recycling, products that are packed in recycled or recyclable material, products that avoid waste during manufacturing, products that are used or remanufactured, products that have greater durability and longer life-span, products and services that minimize adverse environmental impacts
			Products and services that conserve resources – products with high recycled content, designs that require less material to manufacture, products that use less packaging, services that use recycled materials and less packaging, products and services that maximize water efficiency

Products and services that conserve energy – products and services where consumption of fossil fuel during production, transport, usage and delivery is minimized; products and services where more renewable energy is used in production, transport, usage and delivery; products and services that facilitate energy efficiency and resource conservation.

Products and services that protect human health and well-being – products with contents, ingredients, resulting wastes, or waste byproducts that are not persistent, bioaccumulative and toxic substances (PBTs); have low greenhouse gas emissions; cause minimal or no habitat destruction and soil degradation; and maximize safety

Importation of non-environmentally acceptable consumer products or packaging in non-environmentally acceptable materials is prohibited, in keeping with RA 9003 and RA 6969.

Green procurement policies apply to products and services that include, but are not limited to, paper and paper products, office supplies, computer and other electronic supplies, office furniture, vehicles, food and catering, promotional materials, banners, posters, and publications.

4.2 Consideration for Campus Sustainability Design

4.2.1 Conservation of Materials and Energy (i.e built environment, utilities i.e. water, electricity and fuel)

The university is committed to the sustainable use and conservation of materials and energy from planning, acquisition of resources, disposal and management of wastes. It seeks to:
- Promote sustainable or green purchasing procedures
- Reduce material waste
- Reduce its energy consumption and undertake energy efficiency and conservation programs, and effectively reduce its carbon footprint
- Optimize the efficiency of the existing built environment

- Built Environment

The university is committed to optimize the efficiency of the existing built environment by strictly following standards for energy efficient and ecologically designed buildings in every campus. As PSU continues to expand, appropriate design and construction of projects will have to consider energy cost, energy usage, and emissions. Likewise, PSU is dedicated to balance the built environment with a high degree of greenery and seamlessly connected pathways.

Table 1. Programs/Strategies for Built Environment

Areas	Allotment/ Procurement	Usage/Monitoring and Maintenance	Waste Disposal
Structures	New and for renovation buildings/ structures must be guided with Green Tropical Built Environment Principles: • Rainwater harvesting for dual-pipe systems or pico-hydroelectric systems • Roof orientation, roof design, and structural load to accommodate photovoltaic systems • Double envelope systems for improved insulation	Spaces are properly utilized based on • Needs •Functions (interrelationship) • Orientation •Ventilation •Acoustics •Mobility •Safety and security •Cost implications	Waste materials should be disposed after considering reuse, reduction, and recycling of materials, including those from demolished structures. The contractors or service providers are responsible for the disposal of the said wastes The health and safety of stakeholders should be considered in waste management schemes. • Different units are responsible for the

	• Appropriate and better window design for improved natural lighting and ventilation • Efficient control and design of lighting, incl. switches/bulb placement • Use of LED in external/ grounds lighting • Aerators for water taps • Septic tank effluent to have or be connected to sustainable wastewater treatment systems, such as the Integrated Sustainable Irrigation Systems (ISIS) and Decentralized Wastewater Treatment System (DEWATS) • Innovative, clean, and/or renewable technology to improve efficiency of energy, water, and material use • Old buildings must be retrofitted according to the above principles, when possible.		disposal of their respectively generated waste: • Disposal of waste generated in the area of another unit • Regular disposal of hazardous waste (c/o CSC) • Construction waste (c/o contractors, upon approval of BAC with endorsement by USB or CSC) • Recycling of usable fixtures and furniture through different offices and units	
Open grounds and roadways (mobility & transport)	Grounds and pathways should incorporate sustainable design principles that encourage walkability: • Permeable pathways to allow water percolation • Perforated parking pavers and green	Grounds and pathways are used more efficiently, when the following are considered: • Conduciveness to walking, cycling, and shared transport	Road debris, yard waste, and tree maintenance are properly managed for better mobility.	

	parking lots • Permeable pathways to allow water percolation • Perforated parking pavers and green parking lots • Ease and safety of navigation • Heavy duty roads • Ease and safety of navigation	• Regular maintenance of grounds and roadways • Smooth flow of traffic • reduction of noise and air pollution	

- Utilities: Water, Electricity and Fuel

The PSU through its campuses recognizes that fresh water, electricity, and fuel are resources that need to be conserved. It undertakes programs to reduce water consumption through natural rainwater storage systems, suitable and less water-dependent plants, and water recycling programs. It also promotes energy-saving guidelines, use of the most energy-efficient lights and equipment available, as well as the use of renewable energy sources such as solar power and other innovative means. Further, it focuses on emission reduction and energy efficiency in the transport sector, laboratories, kitchens and power generators.

Table 2. Programs/Strategies for Utilities i.e water, electricity and fuel

Areas	Allotment/ Procurement	Usage/Monitoring and Maintenance	Waste Disposal
1. Water	Water use is properly monitored through: • Sub-meters • Regular data collection and feedback to units Water supply is complimented by treated wastewater and harvested rainwater for other purposes, such as irrigation and flushing. There should be systems for • Rainwater harvesting • Storm water management • Wastewater treatment • Dual flush systems for toilets • Accessible potable water	Water can be optimally used and reused, when the following are considered • Information, education, and communication (IEC) programs for stakeholders • Administrative support • Direction from the leadership • Inter-unit communication	Rainwater is allowed to percolate to the water table instead of being channeled directly to the sewage system: • Design of grounds and landscape for maximum surface absorption • Use of permeable pavers Wastewater is first treated and possibly reused before release into the public sewage systems:

			• Use of treated wastewater for irrigation • Use of harvested rainwater for flushing or irrigation
Areas	Allotment/ Procurement	Usage/Monitoring and Maintenance	Waste Disposal
2. Electricity	Electricity use is properly monitored through: • Sub-meters • Regular data collection and feedback to units Electricity is conserved through: • Installation of energy efficient lights (e.g., LED) and equipment (e.g., alternative cooling systems, inverter technology, building management systems) • Expansion of sources of energy to include clean and/or renewable energy (e.g., natural gas, solar/wind power) • Adoption of students' projects on innovative sources of energy	Stakeholders are properly informed of energy-saving guidelines through standard protocols. Whenever possible, gadgets and equipment are chosen for their efficiency and are operated efficiently. Efficient Use of Airconditioning Units: • Thermostat controls are set at 21-23^{o}C • Turn on/off the air-con/s 30 min before start/end of scheduled room use. • Turn on air-con/s only as needed and on staggered basis to prevent power surge.	The waste resulting from the use of electricity is heat. The PSU through its campuses looks out for innovative designs to manage the heat dissipated from equipment, such as airconditioners, e.g., • Use of vertical gardens to absorb heat from compressors and provide insulation • Designs that reuse heat for other purposes
	The PSU through its campuses should move into setting up Building Management Systems.	Lights & Equipment • Turn off lights during break time and at the end of the day. • Unplug equipment after use, when applicable	

- Materials

The University is committed to minimizing the amount of waste generated on campus and continuously innovates and undertakes campus initiatives to reduce consumption, initiate green purchasing procedures, and ensure that products are recyclable, safe and environment-friendly, including strictly complying with disposal guidelines.

Table 3. Programs/Strategies for Materials

Areas	Allotment/ Procurement	Usage/Monitoring and Maintenance	Waste Disposal
1. Office / Lab/ Kitchen Equipment	Priority is given to the procurement and use of the following • Low-wattage CFC-free equipment • Low-wattage; higher EER (energy efficiency ratio) • Longer life-span Equipment that can perform the same functions with lower wattage and lower emissions are preferred. Unless otherwise justified, computers, printers, and other IT office equipment must meet standard specifications set by the Procurement Office (PO), in consultation with Management Information System (MIS) and the units.	Users are informed of the proper use of such equipment through standard protocols. Units are responsible for the regular check-up and preventive maintenance of such equipment, including scheduled replacement based on the item's lifespan.	Fuel emissions are monitored, when possible. All equipment are disposed of properly, considering the following: • Possible recycling and reuse of the equipment or its parts • Proper disposal of bulbs and other electronic/hazardous waste by accredited service provider i.e Pangasinan Environmental Sustainability Cooperative
2. Vehicles	Priority is given to the procurement and use of fuel-	Users are informed of the proper use & maintenance of	There should be a replacement program for school-owned

	efficient and low emission vehicles.	vehicles through standard protocols. Units are responsible for the regular check-up and preventive maintenance of vehicles following the University guidelines pertaining to Preventive Maintenance Vehicle Checklist Standards	vehicles within reasonable timeframes.
3. Generators and Grounds Equipment	Generator sets with high efficiency and minimal noise are preferred. Criteria for the selection of contractors/ suppliers/ service providers include: • Use of energy-efficient and environment-friendly equipment • Fair labor and environment-friendly practices	Generator sets are regularly tested. All equipment are subjected to regular preventive checkup and maintenance.	Equipment emissions are monitored by the concerned unit
4. Supplies a. Paper	The University encourages the coordination of the units with PO in the procurement of paper in standard sizes and in bulk orders. There is preference for paper produced using clean	Users are informed of environment-friendly practices through standard protocols, e.g., • Paperless transactions/esy stems • Double-sided printing • Reuse of envelopes,	Units are encouraged to • Store used paper in dry state • Hold periodic Waste Trade Market to sell used paper • Such is sold to the Pangasinan Environmental

	technology, fair trade, and with a low carbon footprint. All offices are enjoined to use A4 and legal sizes only, using Substance 20 for general use, and Substance 24 for special letterheads.	folders and other similar stationeries • Use old newspapers for wrapping purposes, when possible • Use of appropriate paper quality for different purposes	Sustainability Cooperative or accredited junkshop
b. Cleaning products	Priority is given to • Bulk procurement • Use of environment friendly chemicals	Users are informed of environment-friendly practices through standard protocols, including: • Proper use – only as needed and in recommended amount/ dilution • Follow safety procedures	Units are encouraged to • Strictly comply with guidelines/regulations on proper disposal of chemicals • Properly store such within premises for safety compliance
c. Paint	Criteria for the selection of contractors/ suppliers/ service providers include: • Use of environment friendly products (e.g., KNOxOUT for exterior surfaces) • Accredited suppliers with fair labor and environment-friendly practices	Units are encouraged to plan a schedule of building repainting (e.g., 8-year cycle for all LS buildings).	Units ensure that contractors and in-house users strictly comply with rules on disposal of (excess) materials.
d. Construction Materials (cement etc.)	Criteria for the selection of contractors/	Units should strictly oversee the work of contractors on the following:	Units should ensure that contractors and in-house users strictly

		suppliers/ service providers include: • Use of environment friendly products, with labels attesting high standards • Accredited suppliers with fair labor and environment-friendly practices	• Strict compliance with recommended mixing ratios (e.g., cement-sand gravel mix) and processes • Proper use of materials as required and in proper amounts to avoid wastage	comply with rules on disposal of (excess) materials: • Enforce contractor's disposal guidelines • Reuse excess materials within campus (i.e., by units, departments, and offices), when possible.
	e. Other materials	Laboratory chemicals are procured with the proper permits and stored in appropriate conditions. LPG systems consider the safety of stakeholders. Procurement of kitchen supplies considers the carbon footprint of the manufacture and transport of the supplies.	Users are informed of safety concerns and environment friendly practices through standard protocols.	Units should ensure proper disposal of wastes: • Recoverable and recyclable wastes are processed • Hazardous wastes follow recommended protocols (e.g., Freon from airconditioners, mercury in fluorescent lights)
4.2.2	Green Spaces, Biodiversity and Mobility			

The university is dedicated to maintaining a high degree of greenery and appropriate land use, guided by the Campus Sustainability Design. Each campus encourages walking and the use of sustainable modes of transportation and recognizes the need to balance the demands of pedestrians, cyclists, and motorists.

Sustainable landscape design

Native plants are fundamental to sustainable landscapes, as they tend to naturally resist insects and infections and fungus.

A sustainable campus landscape begins with design. The Campus Sustainable Design incorporates the campus master landscape plan that considers the natural features of the campus. How it looks today and how it might look in the future. The goal is to create an attractive landscape requiring minimal inputs of water, fertilizers, pesticides, labor and building materials. Native plants are fundamental to sustainable landscapes, as they tend to naturally resist insects and infections

and fungus. Also important, they can withstand local weather conditions such as extreme heat, cold or drought. When it comes to sustainable grounds management, the campus look to augment strategies currently use. One best practices include harvesting rainwater, using organic pesticides and mulches, converting garden waste into compost, and much more. These practices can help protect the environment and often reduce costs, while contributing to an attractive and appealing campus environment.

Conservation buffers

Each campus create conservation buffers as another best practice for improving water quality and preserving animal habitats. Commonly seen on farmland, a conservation buffer is a strip of vegetation alongside a stream or wetland that protects air, soil and water quality, and keeps water and dirt from spreading to unwanted places. Buffer strips can provide relaxing views and be incorporated into educational programs.

Programs/Strategies for Green Spaces, Biodiversity, and Mobility

1. To preserve and protect the each campus' green spaces, a Campus Sustainability Committee will review and recommend action to the Campus Executive Director regarding any proposal that may affect the Campus Sustainability Design. The Committee shall be composed of:
    - The Campus Executive Director
    - Administrative Officer
    - Supply Officer
    - Income Generating Project Coordinator
    - Campus Pollution Officer
    - Laboratory Custodian
    - Representative per Department
    - Representative from Utility
2. The university through the campuses follow a system for planting, maintaining, and removing trees.

a. When possible, endemic species are protected and propagated, taking into consideration the safety of the community:
    - Proper tree species are planted in the proper location, e.g., avoid mahogany in pedestrian and parking areas.
    - Tree species are chosen to complement the existing wildlife.
    - Trees can only be planted or removed with the approval of the CED, endorsed by Campus Sustainability Committee upon consultation and permission from the Department of Environment and Natural Resources Office.

b. The CSC shall create and maintain a Campus Tree Inventory, with regular updates to cover the addition/removal of trees, updating of tree locations.

c. Tree donations, preferably of endemic species, are processed in consultation with CSC and tree experts, to preserve the balance between biodiversity and the Campus Sustainability Design.
    - Donors should take into consideration the required space per tree, relation to the existing flora and fauna, as well as the maintenance of trees until it reaches a stage when it can survive on its own.

d. Trimming/pruning of trees is done in anticipation of monsoon rains and tropical storms. Should trees be downed by extreme weather, every effort is taken to restore the tree, when possible.

e. Trees on campus may not be used in any way that may negatively impact their health and growth, for example, nailing of signs, hanging of art work and banner announcements, or installing permanent electrical fixtures. Christmas lights and the like may be installed as long as they are not nailed into the tree or kept open

					overnight. g. Should the campus need to remove particular trees, especially endemic species, balling is preferred over cutting. 3. The University promotes programs to study and appreciate biodiversity. • University activities and operations (e.g., construction, traffic flow, assembly sites) minimize their impact on the existing urban wildlife sanctuaries on campus. • The University supports research on urban biodiversity on campus. 4. The University follows protocols for dealing with stray animals • The University through CSC makes the effort to work with animal welfare groups to come up with the best solutions for stray animals, while balancing the health and safety concerns of its students and personnel. • For stray cats, the University through CSC considers the following, upon the suggestion of the Philippine Animal Welfare Society (PAWS): o Trap-neuter-return (TNR) strategy o Managing the "holding capacity", i.e., managing the feeding time to be done once a day for a maximum of 15 minutes, away from a public site and with minimal people are around. No additional food is added to available leftovers. o The community should be informed and educated about the strategies, including the "no-taming" policy of stray cats. • For other stray animals, the CSC coordinates with appropriate agencies to provide the animals with a proper habitat. 4. The University through CSC takes a strategic approach to balance the demands of pedestrians, cyclists, and motorists. • The University undertakes consultation with stakeholders to get various perspectives. The University promotes walking through the construction of walkways, and the use of sustainable modes of transportation such as the use of vehicles that do not directly use fossil fuel (bicycle, e-vehicle), ridesharing, and other innovations in mobility.
		4.2.3			Food Sustainability and Food Packaging
					The University is committed to food sustainability and the use of sustainable food packaging materials. It aims to: • Promote healthy and nutritious eating; • Achieve high levels of sanitation, environmental sustainability, and efficiency in the operations of food outlets; • Minimize food wastage; and • Promote awareness of food consumption practices in the context of poverty and sustainable development. To achieve these goals, the University will put in place the necessary programs to promote and implement healthy and nutritious food services, proper food handing and service practices, the use of environment-friendly food packaging, and food waste reduction, by engaging all of its stakeholders.
					• Healthy and Nutritious Eating
					The University is committed to promote the health and well-being of its community members by undertaking programs that will inform and educate stakeholders and promote healthy and nutritious food in the various food outlets in the campuses. The University will work towards an environment conducive to positive health choices. Part of this is ensuring that food outlets offer nutritious meals and follow proper food handling and service practices.
					The academic units and OVPA implement the following guidelines and ensure that these are communicated to cafeteria management and concessionaires in all campuses.

A. Health and Nutrition

1. The Nutrition and Dietetics Department and other concerned units shall, through age-appropriate IEC programs, promote awareness about healthy lifestyles, which include eating nutritious food, complemented by sports/activities.

2. The same department will oversee food handling and service practices of food operators, including but not limited to the following:

Table 4 Food Handling and Service Practice

Focus Areas	Transport	Handling	Service
a. Food Service			
1.Food	Clean and covered vans are used for food transport. The use of tricycles/sidecars for food delivery is discouraged. Food is properly packed to ensure high quality upon service. If necessary, refrigerated containers should be used to prevent spoilage.	Food is handled with high levels of sanitation and efficiency: • Minimal human contact with food, (e.g., gloves/ utensils are used in handling food during preparation) • Caterers/ food concessionaires have no access to kitchens on campus; ingredients are prepared offsite (i.e., washing, sorting, cutting, skewering, pre-cooking) and brought to the event location, following transport guidelines. • Food should be kept at proper holding temperatures. • All meat/ poultry/ seafood dishes are served within 4 hours from the time of cooking. Avoid dishes with highly perishable ingredients; batch cooking and delivery is encouraged for events lasting more than 4 hours.	All catering personnel (e.g., food preparers and servers) are expected to: • Have good grooming (clean, short, unpolished nails; hair under net/cap; clean, simple, proper shoes and clothes). • Be in complete uniform, specified with hairnets or caps. • Display the authorized I.D. from the event organizers. • Wash and dry hands before and after work; there is no contact with possible sources of contaminants. • Behave appropriately (no sleeping, chatting and loitering). • Display the health certificate IDs on the upper left front portions of unifo rms
Focus Areas	Transport	Handling	Service

2. Kitchen utensils, tableware, equipment	Serving spoons, kitchen utensils, and food containers are in good condition and have been previously sterilized and stored properly. These are transported in sterile covered containers.	Kitchen utensils and tableware are handled so that these are not exposed to contaminants. Food containers, utensils and tableware on stand-by are shelved on portable merchandisers. No food item, kitchen utensil or tableware comes in contact with the ground.	Packaging materials follow the guidelines on Food Packaging. All service and buffet tables should be covered with tablecloth. Chafing dishes with alcohol-lit lamp/wax must be used for cooked meals and dishes in order to retain food temperature. LPG tanks and Gas Grillers are not allowed. Wax/Alcohol Lamps, or Bain Marie, will only be allowed for 2-4 Hour events; otherwise, only electrical equipment is allowed
b. Beverage Service			
1. Beverages	Clean and covered vans are used for beverage transport. Prepared beverages and water are stored in properlysealed containers for transport. The use of tricycles/sidecars for prepared beverages and their containers is highly discouraged.	Beverages are handled with high levels of sanitation and efficiency: • There is minimal human contact in the preparation and service of beverages (e.g., gloves and utensils are used)	All catering personnel (e.g., food preparers and servers) are expected to follow the same guidelines for service of food indicated above.
2. Glasses, cups, beverage containers	Glasses, cups, beverage containers are in good condition and have been previously sterilized and stored properly. These are transported in sterile covered containers.	Glasses, cups, beverage containers are handled so that these are not exposed to contaminants. Cold beverages are prepared using purified ice and water acquired from reputable suppliers. Hot beverages are prepared	Disposable glasses and cups are not used in serving beverages.

		onsite using electrical equipment.	

3. The Campus Sustainability Committee works with Nutrition and Dietetics and Nursing Department in doing research towards health and nutrition of stakeholders.

- Food Sustainability

1. The Campus Sustainability Committee in developing age-appropriate IEC programs that focus on the impact on natural cycles and users' carbon footprint of 1) food production and transport; 2) food packaging; and 3) food consumption practices.

2. Programs are promoted in different units to reduce food wastage.
   a. Address practices, like getting portions much more than can be finished.
   b. Except for breakfast or lunch meetings or in special cases, only beverages will be served during meetings.

3. Wastes are segregated, put in garbage bags, tied up, and disposed in proper dumping stations. When possible, kitchen and food wastes are mixed with yard waste for composting.

- Food Packaging

1. The most eco-friendly food containers are those that are reusable. Thus, reusable tableware is preferred when serving food. Patrons may bring their own reusable *baunans* (food containers) for take-out or borrow them through the deposit scheme.

2. Materials used for food packaging or which come into contact with food are of foodgrade quality and are approved by a government regulatory body. Only approved wrapping and packaging materials are used (ref. DOH Sanitation Code of the Philippines).

3. Food products use packaging materials that are environmentally sustainable. This means that the packaging material
   - Is manufactured with minimum demand on energy and natural resources
   - Uses processes and have products/by-products that generate minimum waste and have minimum impact on the environment.

4. Because they promote a lifestyle that involves high consumption of resources and waste generation, disposable food packaging materials should generally be avoided, unless they can be degraded and renewed naturally.

5. Whenever possible, individual packaging should be avoided. For example, dispensed drinks (i.e. those poured out of pitchers into reusable glasses, cups or tumblers) are preferred over single-serve water PET bottles.

6. All reusable materials must be washed and sanitized immediately after use and must be kept in a clean storage area. (Please refer to the procedures on dishwashing of utensils, as provided by the Guidelines or by the supplier of the dishwashing unit).

7. The following are acceptable forms of packaging:
   - All natural forms of packaging (i.e. those that did not go through mechanical or chemical processing, such as banana leaves or bowls from coconut shells)
   - All naturally degradable and renewable packaging (i.e. those that are partly processed but can be degraded by nature and can easily be grown and harvested, such as wooden chopsticks, *bilao*, or biodegradable plates from corn/starch)

- All engineered forms of packaging that are designed to be reusable (i.e. those that went through mechanical or chemical processing and are washable and durable, such as ceramic ware, melamine ware, metal cutlery, durable plastic tumblers, food baskets)
- Disposable packaging materials that can be applied to the present waste management practices of the University (i.e. those that can undergo vermicomposting, such as banana or coconut leaves; those that can be collected and sold to the junkshops or accredited service provider(i.e Pangasinan Environmental Sustainability Cooperative) such as aluminum cans, glass bottles, and plastic bottles)

8. The following are not acceptable forms of packaging:
   - All disposable polystyrene and similar plastic packaging (such as Styrofoam food containers, plastic cups, plastic spoons/ forks) that do not fall under 7a and 7b
   - All disposable composite packaging (i.e. materials that are made of two or more different materials laminated or fused together to form a single entity or material, such as tetra packs, foil packs, laminated plastic/paper cups used in vending drinks and beverages)

9. For all plastic disposable packaging, the preference as to the choice of the material is determined by the resin identification code/plastics recycling code, set by the Society of the Plastics Industry, Inc. (SPI). These codes determine the ease of recycling of the plastic product labeled, 1 being the easiest to recycle and 7 being the hardest to recycle. Please refer to Table 1 below.

Table 1. Resin identification code.

Code		Polymer	Examples
PETE or PET		Polyethylene terephthalate	Plastic bottles for water and soda
HDPE		High density polyethylene	Plastic bottles for milk, shampoo, medicine
PVC or V		Polyvinyl chloride	Blister packs, water pipes, tubing, plastic book cover
LDPE		Low density polyethylene	Some plastic sandwich and garbage bags
PP		Polypropylene	Containers for ice cream, yogurt, margarine
PS		Polystyrene	Foamed: food trays/containers Non-foamed: spoons/forks, plastic cups
OTHER		Other plastics (acrylic, fiberglass, nylon, polycarbonate, polylactic acid)	Reusable water bottles

Please note that not all plastic products are suitable for food applications. For example, PVC (polyvinyl chloride) is not suitable for food packaging applications.

10. Food delivered from external sources should follow the packaging guidelines of the University.

		11. Corporate franchises, food sponsors and caterers are asked to meet the guidelines of the University. Initial approval of all packaging materials for use within the University are given by the Campus Sustainability Committee and the higher authority gives approval.
	4.3	Adoption of New Technologies
		1. Units are encouraged to adopt new technologies, some of which are mentioned above, to improve their carbon footprint, increase savings from utilities, and/or educate stakeholders on sustainable technologies. 2. The adoption of new technologies should balance the cost of the technology with the benefits to the community and the environment. If a new technology has clear environmental advantages, such as lowering the carbon footprint, this should be balanced with the cost of technology, especially in view of the rate with which this technology is changing costs. 3. To assess whether the adoption of the new technology is reasonable, the following should be considered: a. The old technology has been used beyond its payback period or ROI. b. The payback period of the new technology should be shorter than its replacement period. c. The calculation of the payback period should include incidental costs like installation of the new technology and waste disposal of the old technology. d. If there are significant effects on the environment, this should be factored into the calculation of the payback period.
	4.4	Waste Management (hazardous and non-hazardous solid, liquid, and gaseous wastes)
		• General Policies on Waste Prevention and Waste Management
		○ Everyone shall practice pollution prevention (also known as waste reduction or source reduction) by: ▪ Using reusable or biodegradable bags, reusable straws, reusable drinking bottles, and reusable or biodegradable containers when purchasing products, food items, and drinks; ▪ Eliminate the use of single-use plastic bags and Styrofoam containers on campus, in keeping with LGU ordinances; ▪ Refrain from bringing single-use plastic cutlery, plastic straws and stirrers, plastic bags, and other single-use non-recyclable or non-biodegradable containers into the university; ▪ Avoid products or food in non-recyclable or non-biodegradable packaging, such as sachets and plastic wrappers. ▪ Avoid water and drinks in plastic bottles whenever water dispensers, drink dispensers, and water fountains are available. ▪ Littering, dumping of waste in canals or esteros, and open burning are prohibited. ▪ Everyone is required to know the types of waste and practice strict segregation at source. ▪ Everyone shall maximize the reuse and recycling of materials to the greatest extent possible. ▪ Everyone shall cooperate and support Buildings & Grounds, Cafeteria, Housing and Residences, and other units of the university in implementing waste prevention and management policies.
		• Liquid Waste
		A. General Rules for Managing Liquid Hazardous Wastes Containers must be closed at all times except when physically adding waste Containers must be labelled with all chemical constituents (and their approximate % by volume), including water Segregate liquid waste from solid wastes Store small (<1 gal) containers in a secondary containment (tray or tub)

Glass bottles on the floor must be stored in a secondary containment (tray or tub)

Leave adequate headspace in liquid containers (~1" is sufficient for a 4L container; leave more or less depending on the size of your waste container)

Accumulate any Mercury-containing liquids or compounds in their own container

4-liter glass bottles, 10- and 20-liter plastic carboys, and 20-liter metal cans are available at no charge

B. Flammable Liquids and Solvent Wastes

Segregate from oxidizers within SAA (separate secondary containment)

Do not mix halogenated solvent waste with non-halogenated waste

For small quantities (<5 gallons), accumulate in glass bottles

For larger quantities (>5 gallons), accumulate in metal cans

Ensure installed grounding straps are attached when pouring into waste containers

Ensure area free of heat or open flame

C. Corrosive Liquid Wastes

Segregate acidic wastes from alkaline wastes within SAA (separate secondary containment)

For small quantities (<5 gallons), accumulate in glass bottles

For larger quantities (>5 gallons), accumulate in plastic carboys

Never accumulate corrosive liquids in a metal container

Always accumulate hydrofluoric acid ("HF") in a plastic container; **NEVER USE GLASS FOR HYDROFLUORIC ACID**

D. Treatment

- Elementary neutralization can be performed on wastes which are hazardous only because they are corrosive (acids, bases)
- A neutralized solution should have a final pH value between 6 and 9. Liquids with pH outside these limits should not be discharged through the sewer system
- EH&S may be able to provide generators with appropriate neutralization materials
- Treatment of other materials to lessen the hazard or amount of a waste can be included as part of standard operating procedures in laboratories
- Such procedures should be written and made a part of specific experimental protocol

B. General Rules for Managing Liquid Non-Hazardous Wastes

- Solutions containing only non-hazardous, water miscible liquid materials, pH between 6 and 9.5, can be disposed through the sewer system
- Remember: "hazardous" includes flammable liquids even if water soluble

- Compressed Gas Safety

General Description

"**Compressed gas**" means:

1. A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F (21.1 deg. C); or
2. A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F (54.4 deg. C) regardless of the pressure at 70 deg. F (21.1 deg. C); or
3. A liquid having a vapor pressure exceeding 40 psi at 100 deg. F (37.8 deg. C) as determined by ASTM D-323-72.

Compressed gases can be toxic, flammable, oxidizing, corrosive, or inert. In the event of a leak, inert gases can quickly displace air in a large area creating an oxygen-deficient atmosphere, toxic gases can create poison atmospheres, and flammable or reactive gases can result in fire

and exploding cylinders. In addition, there are hazards from the pressure of the gas and the physical weight of the cylinder. A gas cylinder falling over can break containers and crush feet. The cylinder can itself become a missile if the cylinder valve is broken off.

Compressed gases can cause fires, explosions, oxygen deficient atmospheres, toxic gas exposures as well as the innate physical hazard associated with cylinders under high pressure. Special storage, use, handling and disposal procedures are necessary to ensure the safety of researchers using these chemicals and equipment.

Water tanks have compressed air and could be dangerous if not properly handled and maintained.

General cylinder safety

- Accept only properly identified cylinders and do not rely on color codes.
- Wear safety equipment appropriate for the hazard potential of the gas before beginning work.
- If a cylinder or valve is noticeably corroded, the vendor should be contacted for instructions.
- A leaking cylinder should be removed and isolated in a well-ventilated safe area. It may be necessary to call in trained emergency response personnel.
- If the leak is at the junction of the cylinder valve and cylinder DO NOT try to repair! Instead, contact the supplier.

Storage, Use and Handling

- Properly secure cylinders in a well ventilated and protected area away from heat, flames, and the sun.
- Segregated cylinders by hazard classes while in storage.
- Discontinue use of the cylinder when it has at least 25 psi remaining; close valve to prevent air and moisture from entering. Return unused and empty cylinders to the vendor for reuse or refill.
- Mark or tag empty cylinders "EMPTY"
- All compressed gas cylinders must bear labels that clearly identify the contents.
- Compressed gas cylinders must be in an upright position and supported at all times, whether full or empty. Acceptable methods of support include:
    a. wall-mounted or bench-mounted gas cylinder brackets;
    b. chains or belts anchored to walls or benches; and,
    c. free-standing dollies or carts designed for gas cylinders and equipped with safety chains or belts.
- Gas cylinders must have the valve protection cap in place except when in use.
- Use appropriate dollies or hand trucks to move cylinders weighing more than 50 pounds.
- Pressure regulators and gauges must be compatible with the cylinder valves. You may not use "cheaters" (adapters) instead of the correct regulator and gauge.
- Cylinders of dangerous gases, such as ammonia, carbonyl sulfide, hydrogen cyanide, hydrogen sulfide, methylamine, and nitric oxide, must follow the University's Dangerous Gas Policy.

DO NOT

- DO NOT purchase more or larger cylinders than necessary;
- DO NOT store flammable gases next to an exit or near oxygen cylinders;
- DO NOT use copper fittings or tubing on acetylene tanks;
- DO NOT use Teflon tape on cylinder or tube fitting connections, which have metal-to-metal face seals or gasket seals;

- DO NOT permit oil or grease to contact cylinders or their valves, especially cylinders containing oxidizing gases.

Disposal

There are two general types of compressed gas cylinders: returnable (owned by the gas supplier, rental fee charged to the University) and non-returnable. Most suppliers will accept the return of their cylinders even if they are not empty. However, suppliers will not accept non-returnable cylinders under any circumstances. Disposal of non-returnable cylinders containing highly toxic or reactive gas can be very expensive. Therefore, purchase compressed gases in returnable cylinders if available. If non-returnable cylinders are the only alternative, be prepared to pay for the cost of disposal.

- Solid Waste

SOLID WASTE refers to all discarded household, commercial waste, nonhazardous institutional and industrial waste, street sweeping, construction debris, agricultural waste and other non-hazardous and non-toxic solid waste

COMPOSTABLE WASTES. Compostable wastes are biodegradable wastes such as food waste, garden waste, animal waste and human waste. They undergo biological degradation under controlled conditions and can be turned into compost (soil conditioner or organic fertilizer) by mixing them with soil, water, air and biological additives/activators (optional). Examples are: · Fruit and vegetable peelings · Leftover foods · Vegetable trims · Fish/fowl/meat/animal entrails · Soft shells · Seeds · Leaves · Flowers · Twigs · Branches · Stems

RECYCLABLE WASTES. Recyclable materials refer to any waste material retrieved from the waste stream and free from contamination that can still be converted into suitable beneficial use. These may be transformed into new products in such a manner that the original products may lose their identity. Examples are: · Newspaper · Ferrous scrap metal · Non-ferrous scrap metal · Corrugated cardboard · Aluminum · Glass · Office paper · Tin cans

RESIDUAL WASTES. Residual wastes are solid waste materials that are non-compostable and non-recyclable. It should be disposed ecologically through a long-term disposal facility or sanitary landfill. Examples are: · Sanitary napkins · Disposable diapers · Worn-out rugs

Waste Avoidance And The Three R's Of Solid Waste Management

AVOIDANCE
*Avoid disposable goods such as throwaway razors, pens, diapers, etc.
* Eliminate household toxic waste from the garbage stream
* Avoid products that are made from non-renewable resources

REDUCE
* Reduce the amount of unnecessary packaging.
* Adopt practices that reduce waste toxicity

REUSE
* Consider reusable products.
* Maintain and repair durable products.
* Reuse bags, containers, and other items.
* Borrow, rent, or share items used infrequently.
* Sell or donate goods instead of throwing them out.

RECYCLE
* Choose recyclable products and containers and recycle them.
* Select products made from recyclable materials.

		* Compost yard trimmings, food scraps and other biodegradable wastes. * Do not burn.
		General Process and Management of All types of wastes
		Everyone and every unit in the campus and university main is enjoin to observe the following: 1. All residual wastes generated in the vicinity of the campus should be brought home i.e candy wrapper, biscuit wrapper, etc. In case there are unavoidable residual wastes then LGU shall be contacted for collection per agreed schedule. 2. Only comfort rooms are provided with trash bin for soiled tissues. No left over foods and liquid wastes be placed in said bin. Soiled tissues are subject for composting 3. Unit Head shall coordinate with the Campus Sustainability Committee for the recyclable and compostable wastes. 4.Campus Sustainability Committee (CSC) shall tap the services of the junkshops or the services of the Pangasinan Environmental Sustainability Cooperative for the selling of the recyclable wastes. Such shall be considered as one of income generating of the campus and university. 5. The CSC shall schedule the collection of the recyclable materials or wastes with the campus units and the Pangasinan Environmental Sustainability Cooperative or PESC. 6. Reporting of the status of waste management and income earned from wastes by the CSC is submitted to the University Sustainability Board and finally to the Office of the Vice President for Administration.
	4.5	Pollution Control
		To control pollution as stated in RA 8749 Clean Air Act (air pollution), RA 9275 Phil Clean Water Act (water pollution), Presidential Decree No. 1152 Philippine Environmental Code (noise pollution), in every campus/gs of the PSU, a specific strategic plan for SY 2021-2025 is attached.
	4.6	Disaster Risk Reduction and Management
		• Disaster Risk Awareness and Preparation
		1. Campus sustainability initiatives are an indirect way to reduce disaster risk because these initiatives contribute to the reduction of carbon and water footprints, as well as to the increase of urban biodiversity, both of which may have some impact on climate change, no matter how small. 2. The Campus Sustainability Committee works together with concerned units develop and implement training modules for faculty, staff and administrators who can be engaged in informing, educating, and forming students and other stakeholders towards being resilient, responsive, and responsible during disasters. Disaster Risk Awareness and Preparation modules include: • The science of natural disasters, such as extreme weather and earthquakes; • Mapping and recognizing disaster risks; • Drills: responses before, during and after events (including evacuation protocols and exit strategies); • Communication systems; and • First aid and rescue. 3. Various points in the academic curricula provide opportunities for deeper understanding of event-related science and a more thorough discussion of proper responses and responsibilities. 4. Common general protocols are made available to stakeholders, with hazard-specific guidelines, e.g., for earthquakes and extreme weather events as well as for anthropogenic or human-made hazards.
		• Disaster Risk Management
		1. The USB together with the CSC spearhead efforts in institutionalizing systems for communication, evacuation, and access to resources, first aid, and rescue during disasters, as well as psychosocial support after disaster-related events. The PSU Emergency Management

			Plan contains the overall plan, leadership, and structures for emergency response, including protocols for various emergency situations. 2. Pre-emergency protocols include raising the awareness of community members through workshops and regular reminders. Some reminders are found under Appendix of this Manual. 3. Research and studies, in coordination with Office of the Vice President for Research, Extension, and Innovation (OVPREI), inform plans and protocols before, during, and after the emergence of hazards. These studies include mapping and analysis of GIS layers, and will be material for continuously updating response by the community. 4. Partnerships with other institutions, and the LGU Fire Department, are valuable in developing Disaster Risk Reduction Management programs and should be explored if not entered into.
5	Monitoring and Evaluation		
			All activities of the university related to the sustainability shall be anchored from the plan. Every implementation of each plan has to be monitored. Schedule and work plan including monitoring and evaluation form are set in consultation with the concerned units or offices and even committees
			The CSC should design specific monitoring and evaluation plan and process in accordance to the sustainability plan of their respective campuses.
6		Appendices	
	6.1	Strategic Plan relative to PSU's sustainability for SY 2021-2025	
	6.2	Pollution Control Strategic Plan for SY 2021-2025	
	6.3	Joint Memorandum Circular No. 1, S. 2020 "Occupational Safety And Health (OSH) Standards For The Public Sector"	
	6.4	Provincial Ordinance No. 162-2012, " An Ordinance Enacting the Health and Sanitation Code of the Province of Pangasinan"	