ANY OTHER RESEARCH FACILITIES

1. **Natural Tank and Pond Aquaculture Facility**

   Videos **Photos**

2. **Herbal garden**

   Photos

3. **Centre for organic farming** **Photos**

   a) Solid Waste Management

   Vermicomposting facility

   Composting facility

   b) Organic kitchen garden

   Kitchen Garden

NATURAL TANK AND POND AQUACULTURE FACILITY

NATURAL TANK AND POND AQUACULTURE FACILITY

Natural tank and pond Aquaculture facility was established on 2022. This facility provides an opportunity to the students, research scholars and faculty to carry out their research work from lab to land studies.

Marine biology students will get direct benefit with the facility by daily hands on practical experience of aquaculture farm setup, tank maintenance, water quality management, understanding the culture parameters like pH, temperature, salinity, alkalinity, algal blooms etc, live feeding the culture animals, antibiotic free feed management, calculation of feed conversion ratios, catching, grading of culture species and marketing.

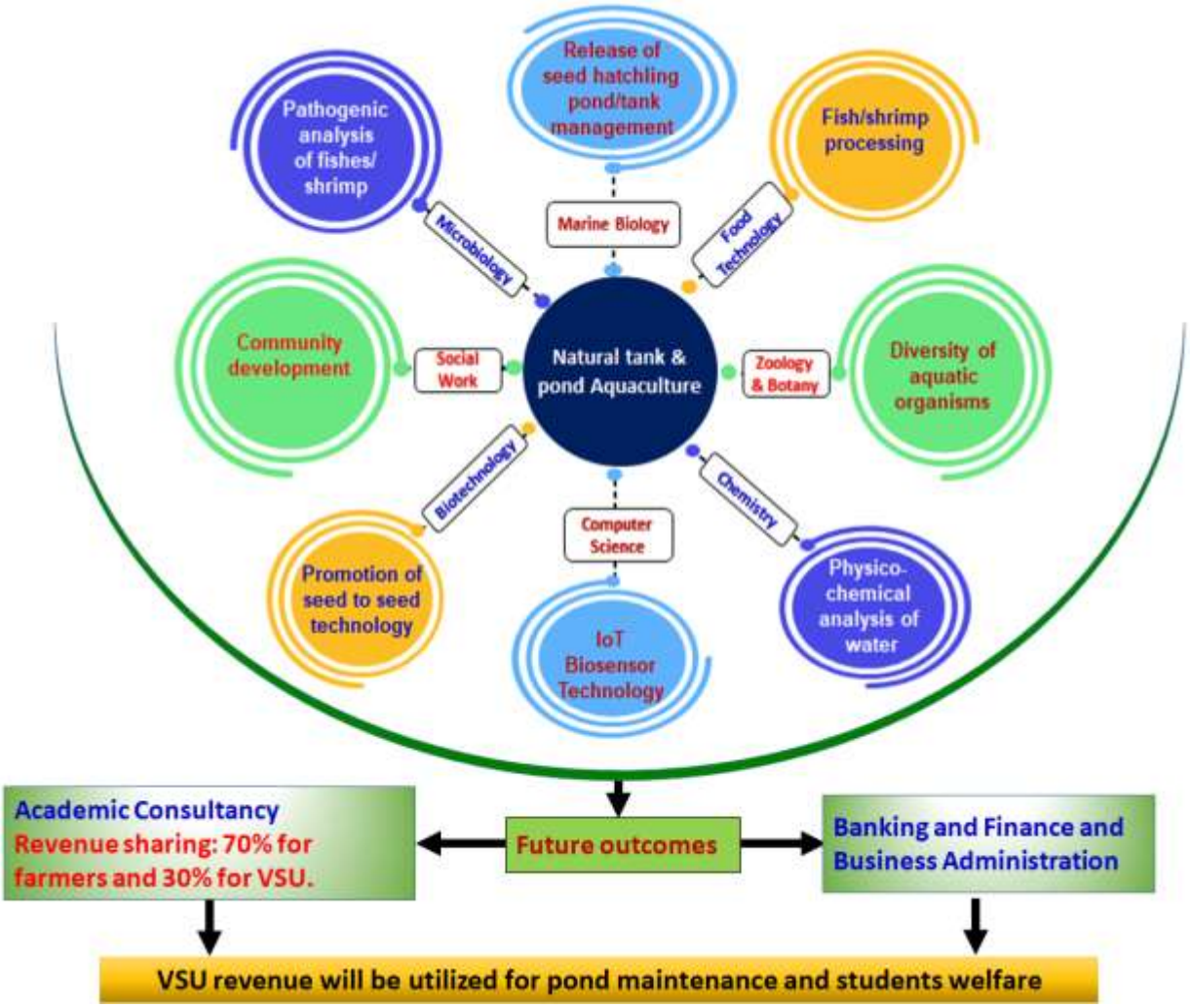
For Biotechnology and Microbiology students, along with hands on experience on aquaculture, it provides the opportunity to learn the microbial biodiversity in aquaculture and natural waters, Understanding and developing the water, soil and feed Probiotics, Prebiotics, Biofloc technology for aquaculture species, disease diagnostics and management of fishes and shrimp.

Chemistry students by availing the facility can learn the physico chemical analysis of water to measure the parameters like Ammonia Levels, Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Iron and Heavy metal concentrations, Antibiotic Residue analysis, Soil mineral parameters including Macro nutrients like sodium, Nitrogen, potassium , magnesium, calcium and micro nutrients like Zinc, Selenium etc which are important for healthy growth of the aquatic species.

For monitoring the water and soil quality parameters, IoT can be employed for automation of the daily routine. Computer science students have the opportunity to deploy the latest technologies like IoT and AI in aquaculture automation for increased productivity.

Social Work students get opportunity to interact directly with the farmers by educating them with the latest available culture technologies, updating the feed, water management techniques. Social work department as a part of community development get opportunity to act as middle men between the university researchers and farmers to deliver the research outputs and also involving the community youth to get trained in latest aquaculture technologies and potential of self employment.

Pond facility available for research activities


Release of seed hatchling pond/tank management
Pathogenic analysis of fishes/ shrimp
Fish/shrimp processing
Marine Biology
Microbiology
Food Technology
Community development
Social Work
Natural tank & pond Aquaculture
Zoology & Botany
Diversity of aquatic organisms
Biotechnology
Computer Science
Chemistry
Promotion of seed to seed technology
IoT Biosensor Technology
Physico-chemical analysis of water
Academic Consultancy
Revenue sharing: 70% for farmers and 30% for VSU.
Future outcomes
Banking and Finance and Business Administration
VSU revenue will be utilized for pond maintenance and students welfare

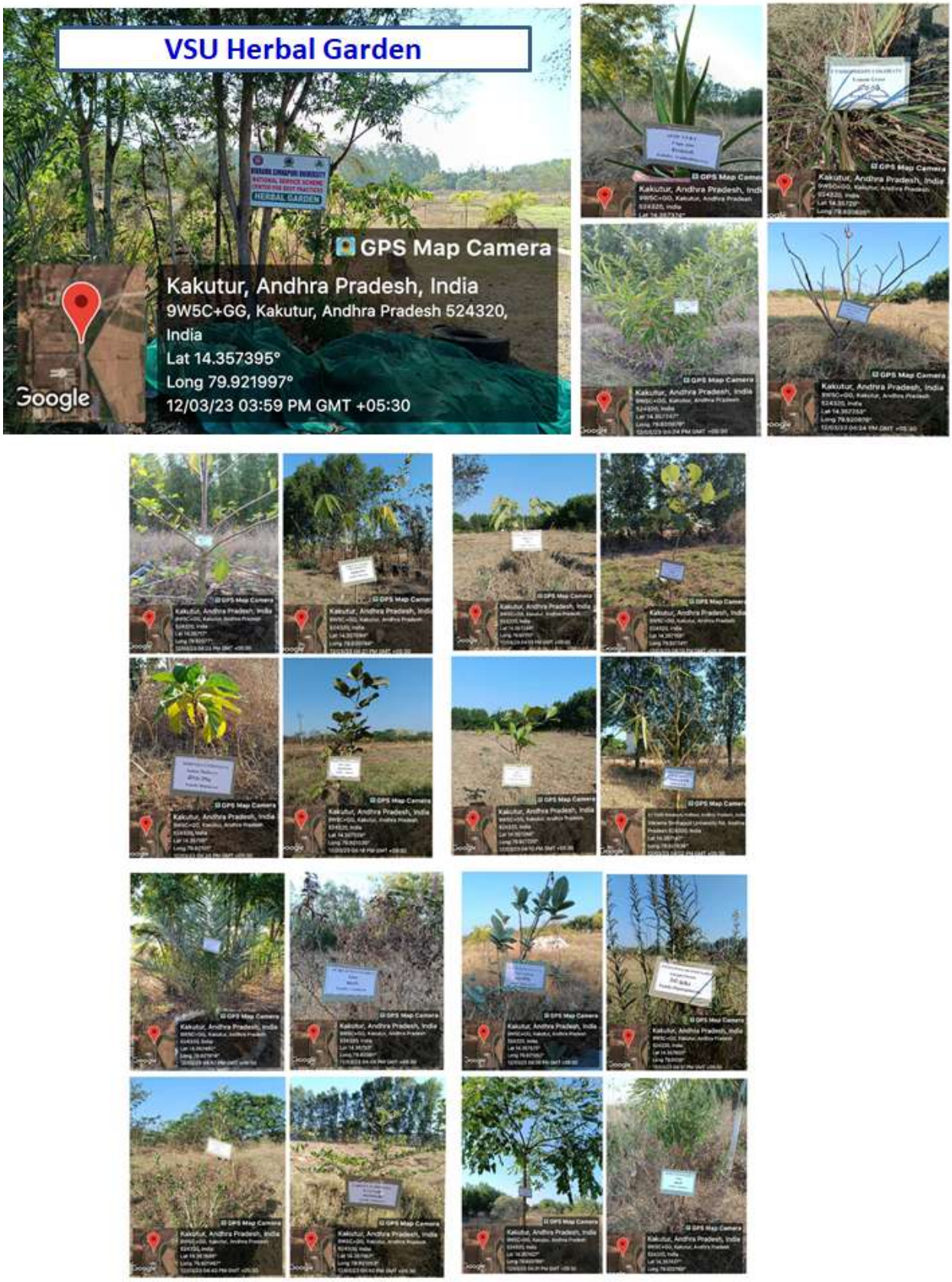
HERBAL GARDEN

Herbal Garden

The demand for medicinal herbal plants is raising interest in Ayurveda and natural treatments, generating a need for organized cultivation of herbal plants. Keeping this in mind, establishment of VSU Herbal Garden was taken up in Vikrama Simhapuri University. Several lifestyle associated health complications such as asthma, diabetes, hypertension, acidity etc. have increased in the recent past. Though several allopathic medicines are available for treating these health complications, people have been relying on traditional Ayurvedic system due to side effects of the allopathic medicines. Ayurvedic medicines having hundreds of years of history in India are one of the best medicines with minimal or no side effects. Hence, there is a greater need to popularize the importance of medicinal plants among student community. In view of this, a medicinal plants garden is established at Vikrama Simhapuri University, Nellore with the following objectives

- To create awareness amongst the local people, PG students, and unemployed youth about the medicinal values and health benefits of locally available and frequently used medicinal plants.
- To impart training to the interested people so as to enable a secondary source of income by providing them with the information on the commercial benefits of local medicinal herbs which they can cultivate and sell
- To conserve the rare, endangered and threatened species of Medicinal Plants
- To maintain the herbarium creation of plant

Two acres of land allocated for the establishment of Herbal Garden in the botanical garden area, opposite to VC block of VSU was prepared using rotavator and total area was divided into six compartments by forming main and internal roads with metal gravel. Master plan was prepared for plantation with 5ft planting space for shrubs and 15 ft planting space for bushes and 20 ft planting space for trees. Shrubs and bushes were planted separately in two different compartments and medicinal tree plants were planted along the border side. After plantation regular watering was done using the house pipe connected to the main water pipeline, which is established from the submerged bore well. The developed herbal garden provides a strong impetus for herbal or medicinal research and imparts training to the students. Currently medicinal benefits of *Caralluma adscendens* has been evaluated plant tissue culture methods, analytical and biochemical methods.


VSU Herbal Garden
HERBAL GARDEN
GPS Map Camera
Kakutur, Andhra Pradesh, India
9W5C+GG, Kakutur, Andhra Pradesh 524320, India
Lat 14.357395°
Long 79.921997°
12/03/23 03:59 PM GMT +05:30
Google

CENTRE FOR ORGANIC FARMING

CENTER FOR ORGANIC FARMING (COF)

Solid Waste Management

Nearly 500 students (300 male and 200 female) are residing on campus in two hostels, 200 day scholars and 200 staff are also present in Vikrama Simhapuri University, Kakutur, Venkatachalam (M). Daily huge amount of different types of solid waste is generated in the campus. The center for best practices has been established in the year 2019 with an objective of developing or achieving an eco-friendly campus i.e., clean hygienic and healthy campus.

To promote environmental hygiene inside the campus and attain swachh campus, center for best practices with the association of NSS cell has initiated the 3R (Reduce, followed by reuse and then recycle) waste management strategy. The strategy includes reducing the waste generated to the possible extent and reusing materials or products which have the usable aspects and recycling of waste generated after proper segregation. The waste generated in the University campus includes both biodegradable and non-biodegradable solid and liquid waste. The non-biodegradable solid waste generated in the VSU campus include, plastic pet bottles, paper, metal cans etc. Biodegradable waste includes kitchen waste, food waste, laves etc. No classified biomedical, hazardous and radioactive waste is generated in the VSU campus.

To manage the different types of waste generated in the administrative building (Dr.APJ Abdhul Kalam Building) and academic block (SPSR Bhavan), dustbins with different colors were kept for collection of wet waste (green color), dry waste (blue color) and e-waste (red color). Compostable green waste is utilized in the composting unit for composting.

Composting Using My Green Bins

Kitchen Waste and food waste generated in the kitchen as well as hostels were collected and composted using My Green Bin (25 lts Capacity) donated by Global Warming Protocol Protection Force (GWPPF), a local NGO. Compost generated was used for raising vegetable garden. MY GREEN BIN converts kitchen waste to organic manure in 25-30 days time. 6 Kgs of solid manure and approximately 4 lts of liquid manure is generated per each My Green

Bin without any additional maintenance cost. Solid and Liquid manure is used for raising kitchen garden.

SOLID WASTE MANAGEMENT

Training programme organized on solid waste managemnt

Vermicomposting

Vermicomposting is eco-friendly way of converting organic waste into a nutrient-rich fertilizer using earth worms. The main objective of Vermicomposting is to produce organic manure of exceptional quality for the organically starved soil by using various organic wastes usually dumped into at places resulting in a foul mess.

Vermicomposting is increasingly being adopted by farmers, municipalities and institutions for managing organic waste. Organic waste can be vermicomposted on-site or transported to a centralized facility. The vermicomposting is gaining wide popularity due to the way to treat more quickly into manure. Further, vermicomposting can be done at large scale at farm level as well as small scale at house hold with minimal or no infrastructure facilities. Vermicompost also known as “Black Gold” also consists of plant growth promoting sunstances and microbes.

The facility was created adjacent to the kitchen garden in front of the VSU canteen. Two Mobile composting beds or AgriRich Vermi Compost Bed for Organic Agriculture Manure-8ft x 4ft x 2ft - HDPE 350 GSM Vermiculture Plastic Garden Composters were used for vermicomposting. Garden waste, kitchen waste and wet waste generated in the university campus was used for composting. The generated composted has been used for raising kitchen garden. Center for organic farming of VSU established vermicomposting facility for conducting research by PG students and conducting training to rural women of neighboring community and VSU students.

VERMICOMPOSITING

Training given to the local people on vermicomposting process

Organic Kitchen Garden

Organic farming popularly also known as biological farming or ecological farming is an agricultural process that uses biological fertilizers such as green manure, compost manure, and bone meal. Further, it also includes use of waste or formulations of animal or plant origin for the control of plant pests. Organic farming encourages implementation of environmentally friendly materials or practices to curtail the use of synthetic fertilizers and chemical pesticides. organic manures improve the soil health and vegetables productions through improving soil physico-chemical and biological attributes.

Vikrama Simhapuri University, Nellore established a Center for Organic Farming (CoF) for the promotion of organic farming through training, encouraging everyone to eat vegetables grown organically at least once in a week and conduct research. As a beginning step to achieve this, CoF started organic vegetable garden in the University campus with the support of students and NSS volunteers in 40 cents of land located in front of the VSU canteen. The earmarked land was prepared through tillage operations and land is divided into small plots through bund formation. Farm Yard Manure was applied to the prepared land followed by thorough irrigation or drenching of the land with water for 2-3 days. Seeds of Amaranth (Thotakura), Kenaf (Gongura), Lady Finger (Benda), bottle guard (Sorakaya), ridge guard (Beerakaya) filed bean (Chikkudukaya) and saplings of tomato, Chilli and Egg plant (Vankaya) procured from local market were sown/ planted maintaining proper space. Organic manure especially vermicompost generated through the vermcomposting facility is used for manuring vegetable garden. Watering and weeding on regular basis was done by NSS volunteers and Students of VSU. The garden is flourishing with the growth of colorful, delicious vegetable produce.

Center for organic farming established successfully organic vegetable gardening in the university campus and started imparting training to the rural women of Kakutur village and students of VSU on various technical aspects of vermi-composting and raising kitchen garden organically. Further, vegetable garden is intended for the research studies of PG students of biotechnology and food technology on various topics like nutritional studies, decomposition efficiency of various earthworm species and their correlation with the decomposition of different types of organic wastes.. etc.

VSU KITCHEN GARDEN

Photograph showing the kitchen garden

Plants growing in the kitchen garden as a part of organic farming.