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Shri Balaji Sansthan, Deulgaon Raja's

SHRI VYANKATESH ARTS, COMMERCE & SCIENCE COLLEGE

DEULGAON RAJA, DIST. BULDANA (M.S.) - 443 204
(Affiliated to Sant Gadge Baba Amravati University, Amravati)



SELF STUDY REPORT

Criteria-VII Institutional Values and Best Practices

7.2 Best Practices

7.2.1 Describe two best practices successfully implemented by the institution as per NAAC format provided in the manual.

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Deulgaon Raja - 443 204, Dist. Buldana (M.S.)

NAAC RE-ACCREDITED AT 'B' LEVEL

▲ Affiliated to SGBAU, Amravati ▲ College Code No. 309 ▲ UGC Recog. U/S 2 (F) & 12 (B)

Outward No. SVC / IQAC / 2024

Date: 02 /05/2024

Declaration

This is to declare that the supporting documents provided in this file, including information, reports, numerical data, true copies, etc., have been verified by the Internal Quality Assurance Cell and the Head of the Institution. It is confirmed to be accurate and authentic.

Dr. E. B. Bhalerao

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Dist. Buldana Pin - 443 204



01. TITLE OF THE PRACTICE**BEST PRACTICE II: WATER & WASTE MANAGEMENT (2018-19 TILL TODAY)**

Water is essential for all life and is important for health, spiritual needs, comfort, livelihood and the world's ecosystems. Climate change, population growth, intensified agricultural production and increased abstractions are some of the pressures acting on the availability of water on a changing planet. An integrated approach is therefore required in water management between different sectors to achieve future action on water and sustainable development. Water Management is important since it helps determine future Irrigation expectations. Water management is the management of water resources under set policies and regulations. Water, once an abundant natural resource, is becoming a more valuable commodity due to droughts and overuse. Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources.

Waste management is equally important preventing pollution and ecological degradation; securing ecologically sustainable development while promoting justifiable economic and social promoting and ensuring the effective delivery of waste services. It is important to protect health, well-being and the environment by providing reasonable measures for minimizing the consumption of natural resources, avoiding and minimizing the generation of waste, reducing, re-using, recycling and recovering waste; treating and safely disposing of waste as a last resort; preventing pollution and ecological degradation; securing ecologically sustainable development while promoting justifiable economic and social development, promoting and ensuring the effective delivery of waste services.

2) OBJECTIVE OF THE PRACTICE

- To meet current and future water demands during all hydrologic conditions.
- Meet water demands during emergency or catastrophic conditions.
- Increase use of recycled water.
- Promote sustainable water solutions.
- To make rainwater in the campus usable for viable purposes.
- To ensure the protection of the environment through effective waste management measures.
- To protect the health and wellbeing of people by providing an affordable waste collection service.
- Increase number of jobs within waste services, recycling and recovery sectors.



3) CONTEXT

The town Deulgaon Raja has been facing the problem of water since last many years due to the geographical differences. There is a low rainfall in this area since last many years. The people begin to feel the scarcity of water right from the month of January to July. The water level of this area has gone too deep. The people who tried to dig the bore wells have the very bitter experiences as they could not get water till four to five hundred feet. As a result the people are depending on the municipal council water supply. The college is situated on such rocky land where it is always found to save the trees and to find the resource of water. The college premises are full of trees. It would become quite difficult to save the trees after the month of January with the help of a well dug in the campus. The water from the well is used for all purposes. Taking into consideration the increasing need of water the college tried to dig bore wells at two or three places but in vain. The acute need of water made the college to undertake the project of water management before six years. As a result, presently the rainwater in the campus is completely collected at one place near the well in the campus which naturally has helped to increase the water level of the well.

4) THE PRACTICE :

WASTE MANAGEMENT:

1. To reduce waste at institute, students and staff are educated on proper waste management practices through lectures, advertisement on notice boards, displaying slogan boards in the campus.
2. Waste is collected on a daily basis from various sources and is separated as degradable and Non-degradable waste.
3. Color coded dustbins are used for different types of wastes. Green for degradable and red for Non-degradable solid waste.
4. The Non-degradable solid waste separated is then collected by municipal corporation vehicles for proper disposal.

SOURCE TYPE OF WASTE GENERATED

A) WASTE WATER SOURCES

- 1) Rain water
- 2) Laboratory waste
- 3) Toilet and urinal waste

B) SOLID WASTE SOURCES

1. Classrooms Paper, plastic, aluminum foil, pens, disposable cups, charts, Laboratories Paper, plastic, glass slides, cover slips, glass bottles, blotting papers, tissues, syringes.



2. Staffroom Paper and plastic.
3. Office Paper and plastic.
4. Library Paper and plastic.
5. Toilets Paper, plastic, and sanitary napkins.
6. E-Waste management Institute has: LAN system. WIFI facility. The campus has centralized facility to collect e-waste from institutes, housekeeping and disposal. E-wastes such as computers, laptops, scanner, printer etc

EVIDENCE OF SUCCESS:

A) RAIN WATER HARVESTING :

- It has increased the ground level of water in the college campus. As a result of which water level of Well and Bore well has increased. Harvested rainwater is stored and used during times of drought. Now college is not dependent on municipal water.
- Rainwater harvesting has improved plants and gardens. Using harvested water flush the salt buildup from plants and soil. Harvested rainwater is free from several types of pollutants and man-made contaminants. Rain is also free from chlorination. Using water that is this clean and healthy for plants and trees has saved money on overall property maintenance and landscaping needs.
- IT has cut down the water bills of the campus.

B) SOLID WASTE MANAGEMENT :

C) COMPOSTING :

- Composting has reduced greenhouse gases like carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emissions .
- Composting has improved the quality of our soil and reduces the need for chemical fertilizers and pesticides.
- Replenish our soils Reduce soil erosion.
- Prevent polluted storm water runoff from contaminating our wetlands, lakes, and streams Capture carbon dioxide for climate protection.

A) VERMICOMPOST

- The worm castings contain higher percentage of both macro and micronutrients than the garden compost. Apart from other nutrients, a fine worm cast is rich in NPK which are in readily available form and are released within a month of application.
- Vermicompost enhances plant growth, suppresses disease in plants, increases porosity and microbial activity in soil, and improves water retention and aeration.
- Vermicompost also benefits the environment by reducing the need for chemical fertilizers and decreasing the amount of waste going to landfills.



PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED PROBLEMS ENCOUNTERED

PROBLEMS ENCOUNTERED

Due to water harvesting of the rain water in the college, the water in the premises of the college is left in the college only as a result of this water level of the well and bore has been increase significantly.

The need of water is fulfilled even in summer and the expenses occurring on the tankers of water is reduced.

RESOURCES REQUIRED PROBLEMS ENCOUNTERED

RAIN WATER HARVESTING

- Making of pit,
- Bigger size sand,
- Large rounded stones
- Small pieces of bricks
- PVC Pipes

SOILD WASTE MANAGEMENT

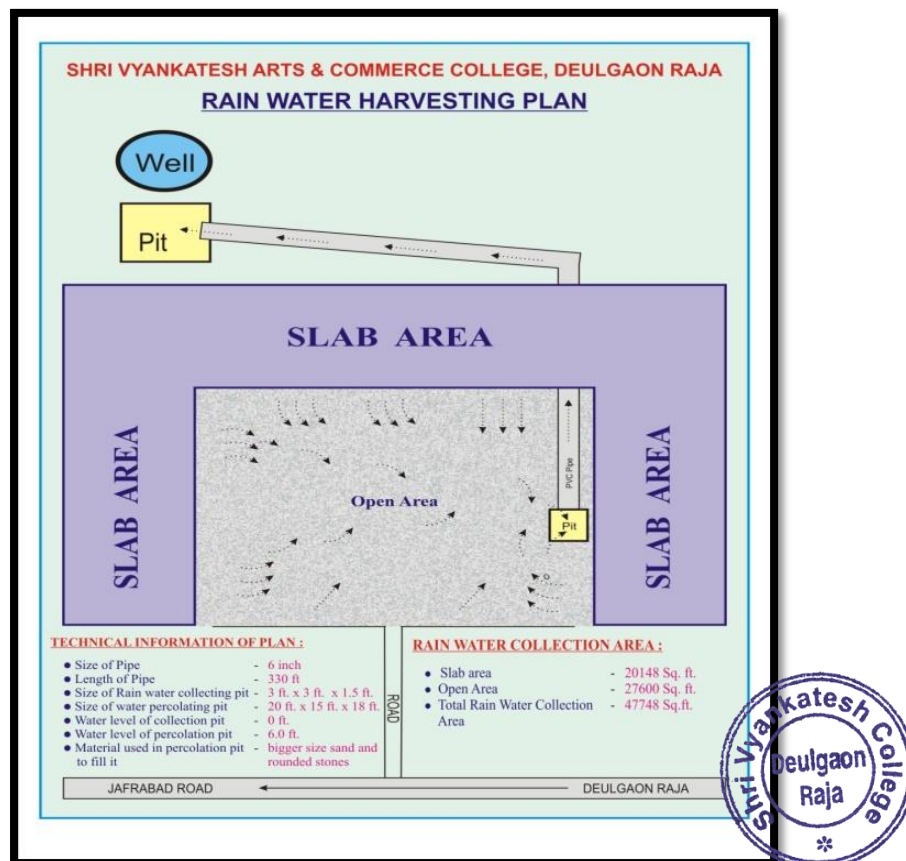
- Making of pit for Composting
- Vermicompost Project :
- material required for construction of tank i.e. Cement, Sand, Water etc.
- Dustbins for waste collection
- Red earthworm species *Eisenia foetida*



REPORT OF BEST PRACTICE II

1) RAIN WATER

RAIN WATER HARVESTING



PLAN MAP

RAIN WATER HARVESTING STRUCTURES AND UTILIZATION IN THE CAMPUS

Deulgaon Raja is situated in Vidarbha region of Maharashtra, where water scarcity is very common. Therefore, rooftop rain water harvesting system is installed for recharging ground water and meeting water requirements. College has three campuses viz Main campus, Science Building Campus and Sports ground. The college has planted several trees in the campus. It requires a large amount of water to survive them. By taking it into consideration the college undertook the rain water harvesting project to collect rain water. At main campus, we have set up rain water harvesting system.

The runoff from the terrace of the college building and campus 47748 Sq.ft. out of which 27600 Sq.ft. is from open area and 20148 Sq.ft. is from roof area is channelized into one pit. This project is executed under able guidance and planning of Hon. Principal Dr. G. B. Jadhav



scientifically consisting of a long pipe of size 6 inch and length 330 feet. A pit of 3x3x1.5 feet is made to collect the rain water from the campus at the corner of low lying area. A pit of 20x15x18 feet is made at the distance of 330 feet from a rain water collecting pit to percolate water into the well. This pit is filled with bigger size sand, large rounded stones and small pieces of bricks. With the help of 330 feet pipe line the collected rain water transports to percolation pit situated near the well due to which the water level of well is seen increased. All the campus water and rooftop rain water outlets discharge into storm water drains and then to the recharge pits to facilitate groundwater recharge.

The project was implemented in 2013. The cost of the entire rainwater harvesting system was Rs 1.5 lacs. The rain water is channelized towards well to raise the ground water level. Frugal use of water has ensured constant supply of water for the stakeholders in the college. This innovative activity of college proved that it is an important for all the people in the society to enrich the water level in our area. Now a days it is considered a great need to make a plan of water harvesting. We are facing the problem of scarcity of water, so to resolve this problem water harvesting is the important tool to maintain the groundwater level high. So, there is need to aware the people regarding the conservation of water or to make plan of water harvesting at their area. It reduces water bills, provide an alternative supply during water restrictions and help to maintain green and healthy garden. It reduces flooding and soil erosion. It also reduces the demand on groundwater. It helps in increasing the groundwater level of the area. So, It is an alternative water source to face future water crisis. This has helped to make the campus lush green and with healthy environment which benefits thousands of students and teachers in the campus. This activity has proved the social approach of the college towards the society.

2) LABORATORY WASTE

We have a liquid waste management tank near Chemistry laboratory. The hazardous waste of chemistry laboratory and usage like acids, different organic solvents, waste water, soluble impurities, are not disposed directly into the drainage. But they are collected in a large tank designed for equalization. By means of agitator, it is homogenized and then kept for sedimentation for about 24 hrs. After sedimentation, the pH of the sediment liquid is checked and it is neutralized with necessary chemicals. Treatment with KMnO_4 , is again done if needed. The treated water is then disposed of into the pit created nearby the tank.



3) TOILET AND URINAL WASTE

The socking pit has been created at the rear of the building in the college premises and the waste water is release into that pit.



**WATER FROM THE CAMPUS IS COLLECTED AT THE COMMON POINT
AND MOVED TOWARDS PIT THROUGH PIPELINE**



PIPELINE FOR RAIN WATER COLLECTION





RAIN WATER COLLECTION PIT NEAR THE WELL.



SOCKING PIT FOR THE URINAL





SOCKING PIT FOR THE URINAL



SOCKING PIT FOR THE URINAL



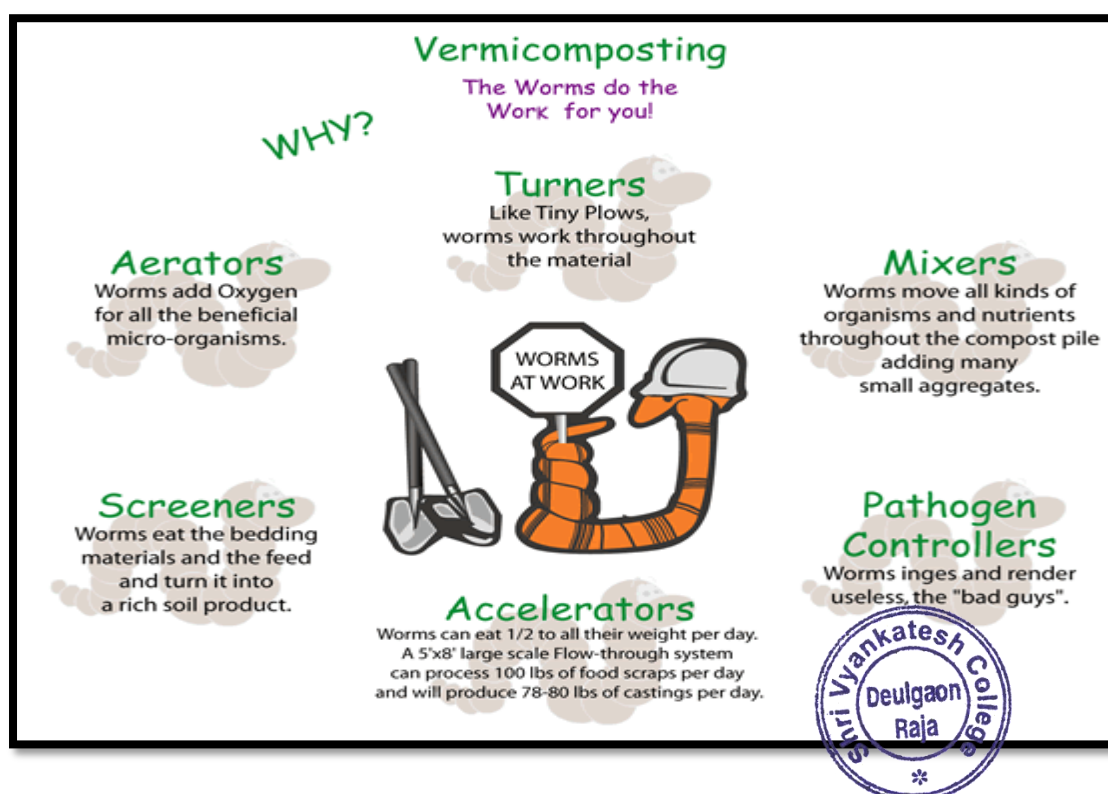
B) SOLID WASTE MANAGEMENT

Our college is very conscious and committed to the environmental issues with regard to protection, conservation and sustenance of natural resources. The faculty and the students are being sensitized towards environmental issues through continuous orientation programs. The different sectors of the institution promote conservation of natural resources by implementing different strategies with reference to utilization of water and energy.

1) COMPOST

Wet waste generated at campus is collected in a pit of size is 15×10×4 feet. This waste is subjected for windrow composting. It is the production of compost by piling organic matter or biodegradable waste. This pit is mixed periodically to improve the porosity, oxygen content, remove moisture and redistribute cold and hot portions of pile. From this we get 90 kg for every year dry manure which is utilized for the gardening the campus and various plants present in the premises of the Institution. The solid waste generated by the Microbiology Department which contains highly dangerous pathogens is disposed following bio safety norms as it is first sterilized by autoclaving and then disposed.

2) VERMICOMPOST



Our campus has well established vermicompost project where the organic debris are converted into worm castings that play important role in increasing the fertility of soil. Red earthworm species *Eisenia foetida*, are used for compost making. The non-burrowing earthworms eat 10 percent soil and 90 percent organic waste materials; these convert the organic waste into vermicompost faster than the burrowing earthworms. Earthworms consume organic wastes and reduce the volume by 40–60 percent. Each earthworm weighs about 0.5 to 0.6 gram, eats waste equivalent to its body weight and produces cast equivalent to about 50 percent of the waste it consumes in a day. The moisture content of castings ranges between 32 and 66 percent and the pH is around 7. The level of nutrients in compost depends upon the source of the raw material and the species of earthworm. vermicomposting is done to meet personal requirements are harvesting 1-2 tons of vermicompost annually.

VERMICOMPOST TEA

A relatively new product from vermicomposting is vermicompost tea which is a liquid produced by extracting organic matter, microorganisms, and nutrients from vermicompost. Unlike vermicompost and compost, this tea may be applied directly to plant foliage, reportedly to enhance disease suppression. Vermicompost tea is applied to the soil as a supplement between compost applications to increase biological activity.

E-WASTE MANAGEMENT

We promote E-waste management by practicing buy back offers. Whenever computers are purchased, we request the vendors to buy back the old system so that it is recycled. Similarly, we advocate the staff and students to give their old mobiles and purchase new ones from stores where they have such offers. The staff uses pen drives to store data instead of files or CDs. Electronic goods are put to optimum use and the minor repairs are set right by the staff and the laboratory assistants and professional technicians are called as and when required.



PHOTOGRAPHS:



COLLEGE SERVANTS PORING CULTURE ON WEASTE FOR COMPOSTING.



COLLEGE SERVANTS DUMPING ORGANIC WEASTE FOR COMPOSTING





COLLEGE SERVENTS DUMPING ORGANIC WEASTE FOR COMPOSTING



STUDENTS COLLECTING ORGANIC WEASTE FOR VERMICOPOSTING.





STUDENT SPREADING ORGANIC WEASTE FOR VERMICOPOSTING



STUDENTS ALONGWITH FACULTY MEMBERS PREPARING FOR VERMICOPOSTING





VERMICOMPOST COLLECTION

