



# Green Audit

Report

Submitted to the

**Internal Quality Assurance Cell (IQAC)**

Govt. Digvijay Autonomous Post Graduate College  
Rajnandgaon (C.G.)

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## Content

<b>S. No.</b>	<b>Particular</b>	<b>Page No.</b>
1	About Govt. Digvijay College Rajnandgaon	03
2	Introduction to Green Audit	04
3	Water Audit	05-06
4	Energy Audit	07
5	Health Audit	08-09
6	Solid waste and Disposal Audit	10
7	Biodiversity Audit	11-12
8	Photographs	13-17

## About Govt. Digvijay College Rajnandgaon

Government Digvijay P.G. Autonomous College, Rajnandgaon is one of the premier institutions of Chhattisgarh, which was founded by the visionary personality, Late Mahant Raja Digvijay Das on 13th July 1957, to fulfill his dream of having a center of higher education in this backward and tribal region. His keenness to have a center of higher education in Rajnandgaon can be estimated by the fact that he donated his own palace for the college, which is spread over a land area of more than 10 acres and a cash of Rs. 50,000. A feeling of honour among the students by the associating themselves with Digvijay College of “Sanskar-Dhani Nagari” of Chhattisgarh fulfill his dream in a true sense. Initially it was a private college, which was taken over by Government on 26th January, 1973. At present there are 18 PG department teaching by 102 full time teacher. The undergraduate course includes – BA in combination of subjects like Political Science/Home Science, Hindi Literature/Sanskrit Literature, Philosophy/Psychology/Geography, History/English Literature, Sociology, Economics; B.Sc. in Physics, Chemistry, Botany, Zoology, Mathematics, Geology, Biotechnology, Computer Science, Anthropology, Microbiology; B.Com.; BCA; PGDCA; DCA While PG in Hindi, English, Sanskrit, Economics, Geography, Sociology, Political Science, History, Rural development, Master of Social Work (MSW), Physics, Chemistry, Botany, Zoology, Mathematics, Microbiology, Biotechnology and computer Science.

## **Introduction to Green Audit**

The rapid environmental degradation at local, regional and global level is real, which is leading us to global “Environmental poverty”. Stabilization of human population, adoption of environmentally sound and sustainable technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature.

Green auditing is the corporate responsibility to bring out the truth about the statements made by the government and companies with regard to the effects of environment pollution. It reviews the measures taken to minimize and overcome pollution. The green audit is study of the effects of a company’s activities and performance on the environment. It is widely known as Environment Audit.

The green audit includes inspection of water, Energy, Solid waste Management, Health and biodiversity. Water auditing includes its utilization, waste water treatment and conservation. The energy utilization within institution is also very important.

Conservation of energy is focused to the energy auditing. Every institution generates solid waste little or more. The management and recycling of solid waste is monitored during green auditing. Similarly activities of some institution also affect the health of workers. Monitoring of such activity and also the health checkup of peoples is considered of not is answered while auditing the institution. Another major aspect is biodiversity. Institutional activity may also affect the habitat of flora and fauna. Therefore monitoring of biodiversity within organization also considered.

## Water Audit

The study site includes laboratories of botany, zoology, microbiology, chemistry and biotechnology, botanical and other gardens, boy's hostel, bathrooms, water coolers (RO and UV system), play ground and auditorium. The auditors were also visited to staff colonies. Survey includes on site observation and discussion with charge staff and officers.

The GDACR has own resource of water to supply the whole institution except staff colony. The water requirement of staff colony is fulfill by Municipal Corporation of Rajnandgaon city. The institution resource includes two bore well and two hand pumps

Institutional water supply includes laboratories, gardens, boys hostel, library, girls common room, bathrooms, water coolers, auditorium etc. while municipal supply covers staff colony phase 1 and phase 2. The water is supplied by galvanized steel (metal) pipe lines, it is about 12,000 to 1,500 meter.

The bore well 1 situated near cycle stand scheduled from morning 08 am to 04 pm (08hr) fulfill the 75-80% institutional requirement while bore well 2 situated near chemistry department scheduled for 03hr fulfill the 20-25% requirement. The hand pumps are least utilized source of water contributed only 1-3% of water supply. The management of pipe lines and storage tanks were done previously on June 2016. The municipal supply to the staff colony scheduled morning and evening 1 and half hour.

GDACR is facilitated with water coolers with reverse osmosis (RO) and ultra violet (UV) treatment for drinking water.

Mostly institutional water is consumed by laboratory (30-35%) which includes laboratory of chemistry, zoology, botany, biotechnology, microbiology. The different gardens including botanical garden consume 20-25% of total followed by

bathrooms (15-20%), boys hostel (15-20%), drinking water (10-15%) and sports ground and other (5-10%).

GDACR is running in the building donated by Raja Mahant Digvijay Das hence it is not a planned building for institutional purpose. The present building was the fort of old Rajnandgaon state. So, proper waste water disposal system is not available in the college. National Service Scheme (NSS) routinely make work on purification of Ranisagar pond. The Ranisagar pond is the adopted pond of NSS, GDACR. Joint corporation of NSS and Nagar Nigam and Dr. S. K. Thiske (Principal Investigator, Research Project) and Nagar Nigam monitor and clean the waste area of pond and municipality.

Based on the UGC curriculum undergraduate (UG) courses must have to qualify a separate paper on “Environmental studies and human rights” for their UG degree. The particular paper is divided in theory and field work. The student must have to obtain 33% marks for qualification. The paper contains topics such as water pollution, causes, water conservation, and rain water harvesting and watershed management. Apart from this zoology, botany, chemistry, biotechnology, microbiology, geography curriculum also includes topics on water pollution and conservation in their subject paper which include both undergraduate and post graduate program.

The faculties of GDACR are actively engaged with the research in field of water pollution determination and management. It includes research projects and publications.

## Energy Audit

All the areas of college have been covered during the survey where electricity is consuming which includes classrooms, laboratories, hostel, administrative building, library, auditorium etc. The energy consuming items were surveyed, conservational strategies were analyzed and further fuel based energy utilization was also taken into consideration.

The GDACR receives electricity from Chhattisgarh state power distribution company limited, Raipur. The GDACR has own transformer which distribute electricity to every building. The college is lightening by yellow street lamp. The major energy consuming items are tube lights and fans. Apart from this air condition, laboratory instruments, refrigerators, air coolers, bore well submercible and water cooler and ICT devices are other power consuming items.

The conservation of electricity in GDACR is done by the use of star rating equipments such as air condition and refrigerators. NSS student are aware about the unnecessary use of lights and fans in empty classrooms. A campaign of NSS is also running in this theme

The GDACR is a leading college of western Chhattisgarh and the most students belongs to rural population hence bicycle is the most common vehicle use by the student. But few of them also come with bikes. The average bicycle per day is about 500 to 600 while an average bike per day is 200 to 300. The other student and many faculties use public transport facility to come the institute.

The sites of improvement are to replace traditional tube light with LED bulb to reduce the electric consumption and also the bill. The laboratories of college produce large amount of biological waste from botany, zoology, home science, biotechnology and microbiology which may use to produce the biogas and reutilization in home science and other purposes.

## Health Audit

The whole college is covered during the survey. Visited to the health centre and meeting with the officials of Red Cross of college is taken up.

The GDACR has own health centre facility. The detail of health centre facility is as follows –

Name of Doctor : Dr. S. K. Mishra

Qualification of Doctor : M.B.B.S.

Experience: 37yr

Timing in the college: Thursday 12 to 3pm

Facilities: Blood pressure monitoring

Weight monitoring

NCC & NSS Medical checkup and certificate

General medicines for cold, cough, indigestion, fever

Patient per week: 7 to 10, which is increased by 10-12 during rainy

The GDACR has its own red cross for donation of blood. The Red Cross officer is Dr. H. S. Bhatia who is working in the service since 20 year. The average donation per month is 5 to 6 which approx 60 per year is. The maximum donation belongs to O<sup>+</sup> while minimum belongs to negative blood groups.

Apart from the health centre and blood donation GDACR also work towards several other health related activities in the college which includes –

*Celebration of Krimi mukti diwas* : Krimi mukti diwas was celebrated in the 31 August GDACR in which Abendazole tablet was distributed to the student below 19 year.

*Teaching of general laboratory safety measures* : Department like biotechnology is serious about laboratory acquired infection. The department includes general laboratory safety measures as first experiment in B.Sc. 1 year and M.Sc. 1 SEM of biotechnology students. So the students can aware about laboratory rules before



going through the experiment. It provides information to avoid laboratory infection.

*Health related topics in the syllabus* : The autonomy of the GDACR included health related topics in the syllabus which not only includes major issues like hepatitis, malaria, AIDS, tuberculosis but also separate papers and units are also based on the medical microbiology.

*Celebration of AIDS day* : with the aim to spread the knowledge about HIV virus, transmission and cure of AIDS the department of zoology celebrates the AIDS day each year on 1 December.

The GDACR has its own gymnasium with the facilities of leg workout, chest workout, dumbbells, rowers, steppers, abdominal exerciser and many others. The average student and staff per day are approximately 50.

## GDACR and Yoga

### Post graduate diploma in yoga

The GDACR is running a post diploma course on yoga. The diploma course includes theory as well as practical exercise program..

### Celebration of International Yoga Day

The GDACR celebrated international yoga day each year on 21<sup>st</sup> of June. NCC, NSS, students, staffs and citizens of Rajnandgaon participated in the yoga day

## **Solid waste and Disposal Audit**

Science laboratories, gardens, administrative office, canteen, computer labs were surveyed to find the sources of solid waste. Waste disposal site was also monitored.

Solid waste in GDACR is mainly generated from practical laboratories especially from chemistry, botany, zoology, microbiology, biotechnology and home science. Apart from this library, autonomous cell, administration office, offices of the different departments and canteen also generate huge amount of solid waste.

Types of solid waste - Filter papers, plant and animal dissection waste, potato peel, used cotton, old herbariums, old practical records, rubber bands, breakage glassware and other experimental waste. Unused documents, internal assessment sheets, old periodicals and newspapers etc.

Separate solid waste disposal sites are available in the GDACR for waste generated from college. The solid waste disposal for college is located in the botanical garden. The staff colony has own disposal site.

The solid waste is collected in the dust bin from different laboratories, departmental offices, libraries etc. The solid waste collected in the dust bin then transported to the disposal site.

Separate system for biological and chemical waste disposal is needed in the GDACR so that biological waste can also be used as manure for garden of college. The recycling of solid waste is not done in the institution.

## **Biodiversity Audit**

The GDACR is sandwiched between two most important ponds Ranisagar and Budasagar hence the GDACR is natural host of different kinds of flora and fauna. Apart from this institutionally developed gardens are also the site of biodiversity.

The botanical garden of GDACR is approximately 50x80 feet area with Medicinal, ornamental, commercial and some rare plant varieties. The plant sample uses in the experiments of botany, biotechnology and microbiology is fulfill by the botanical garden. It is maintained by both teaching and no teaching staff.

Few common plants available in the botanical garden are: Neem, Karanj, Nigur, Alove vera, Hadjod, Jangali haldi, Brahmi, Chitrak, Kev kanda, Satavri, Brayophilum, Amla, Mint, Kaner, Kachnar, Vajradanti, Peepal, Tejpatra etc.

Many individual departments also maintaining departmental garden with the aid of pots and other methods. These department includes Botany, Biotechnology, Computer Science, Geography etc.

The old Rajnandgaon fort and the current GDACR was also the place of a garden which contain plant that has characteristics to loss the memory of individual who feet upon the plant. That's way the garden was named as "Bhoolan Bag" which means the garden of forgetting.

As the GDACR is sandwiched between two large ponds Ranisagar and Budasagar hence the premises is rich in the aquatic and other faunal diversity. The botanical garden is habitat of birds and butterfly.

As earlier noted the present campus of GDACR was the fort of old Rajnandgaon state. As per the Kings civilization Raja Digvijay Das mahant poaches Tiger and Crocodile from the forest of Churria. The GDACR is conserving the animal hunted by King in a small museum.

Animal Surveyed – Mosquito, Spider, Scorpion, Earthworms, Leech, Oreochromis, *Ossambicus*, *Oxygaster bacaila*, *Puntius sarana*, Frog, Tod, Tree frog, Lizard, Snak, Crow, Hock, Carmorant, Sparrow, Pigeon, Heron, Cat, Bat, Dog, Rat, Monkey, Yellow butterfly, Papilionoidea



Figure 1: Donation of blood by student of college



Figure 2: Plantation by NSS volunteers



Figure 3: Plantation by NCC cadets



Figure 4: Blood donatio by students of through red cross of college



Figure 5: Celebration of AIDS day by Dept of Zoology and Red cross of college





Figure 6: Aquatic tank situated at Botanical garden of College

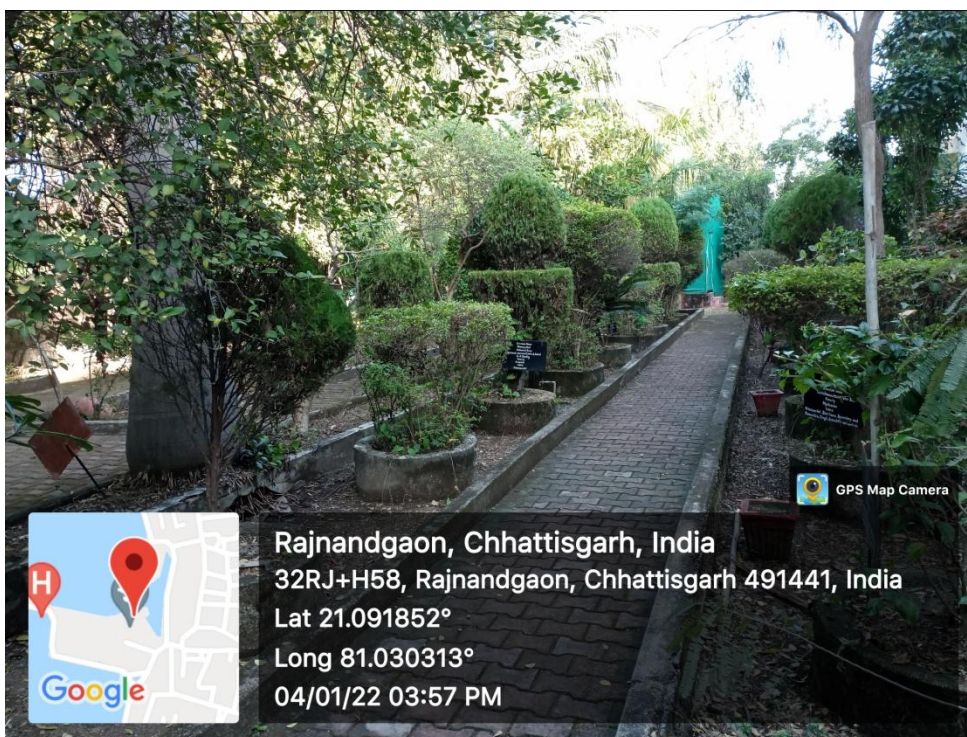


Figure 7: Green view of Botanical Garden



Figure 8: Vermicompost solid waste management

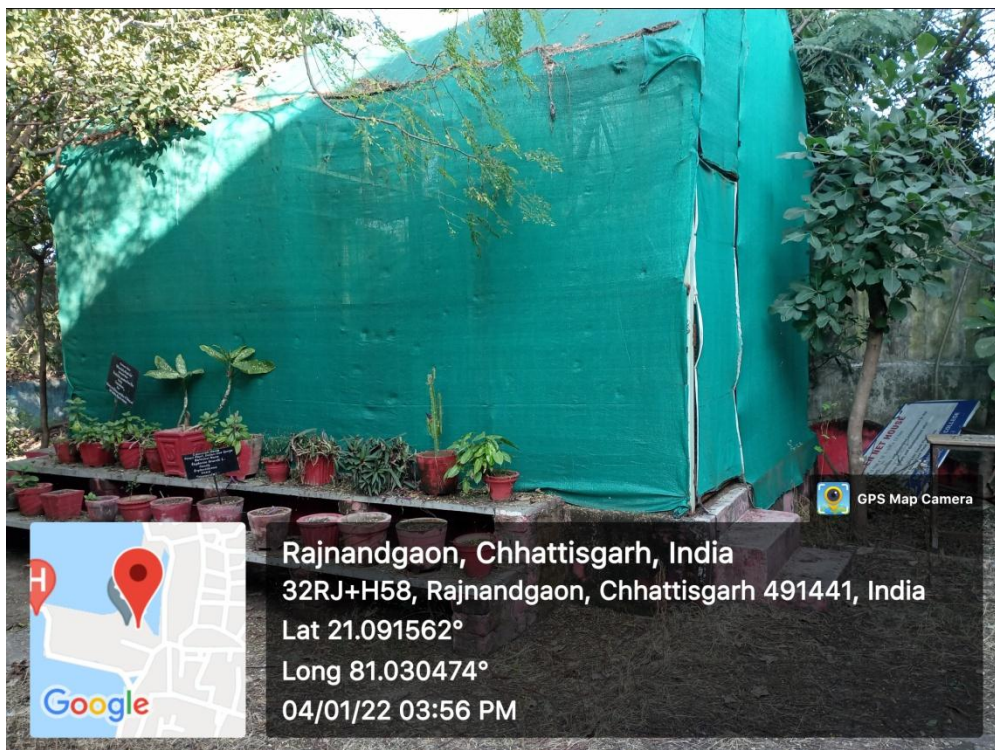


Figure 10: Green house