

**राज्य योजना आयोग**  
**छत्तीसगढ़,**  
योजना भवन, सेक्टर -19, नार्थ ब्लॉक,  
केपिटल कॉम्प्लेक्स, नया रायपुर

**प्रशासकीय स्वीकृति आदेश**

नया रायपुर, दिनांक 05/08/2017

क्रमांक 945/रायोआ/ मूस./2017, छत्तीसगढ़ शासन, वित्त विभाग, मंत्रालय, महानदी भवन, नया रायपुर के पत्र क्रमांक 436/एफ 2016-23-00119/वित्त/नियम/चार नया रायपुर दिनांक 07 नवंबर, 2016, के सरल क्रमांक 06 में प्रदत्त अधिकारों का उपयोग करते हुए शोध प्रस्तावों के अनुमोदन, मूल्यांकन एवं वित्तीय राशि के निर्धारण हेतु गठित मूल्यांकन समिति की बैठक दिनांक 05 अगस्त, 2017 की अनुशंसा पर राज्य योजना आयोग, छत्तीसगढ़ द्वारा बिलासपुर विश्वविद्यालय, बिलासपुर के परियोजना प्रस्ताव – **Research project on wet lands of Ratanpur** को अनुमोदन करते हुए प्रथम किस्त की राशि रु. 5.00 लाख (रूपये पाँच लाख) मात्र, व्यय की प्रशासकीय स्वीकृति प्रदान की जाती है।

यह व्यय वर्ष 2017-18 के आबंटन से मांग संख्या – 31, योजना, आर्थिक एवं सांख्यिकी विभाग से संबंधित व्यय, योजना क्रमांक 7639-राज्य योजना का सुदृढीकरण मूल्यांकन एवं अनुसंधान के अंतर्गत # 10 व्यवसायिक सेवाओं हेतु अदागियों, उप शीर्ष 003-परामर्श सेवाएं मद में विकलनीय होगा।

**क्रियान्वयन एजेंसी – बिलासपुर विश्वविद्यालय, बिलासपुर छ.ग.**

**Work Detailed :**

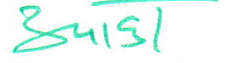
**Reportedly comprise of several wetland complexes of interconnected pond/tanks. These are mainly:**

- (a) Dulahara wetland complex (Dulahara), Bikhama wetland complex (Bikhama, Girajaband, Aathabisha), Ved Ratneswar Pond system: (Ved Ratneswar) and Krishnajuni wetland complex (Jagdevban and Krishnajuni)
- (b) The larger tanks and a few (4-5) of the smaller ones in each complex will have to be studied. The hydrological connectivity has to be checked and the sequence of water flow mapped.
- (c) Water quality samples : near surface and near bottom (if < 2 m depth); also middle layer (about 1-1.5 depth if >3 m deep)  
Number of samples: near margin (2-3 m distance) – all along the periphery – approx every 100 m; in the middle (~10 m from shore) -5 or more samples depending upon area of the tank
- (d) Parameters : Total depth at sampling point, pH, DO, Temp., Conductivity, Transparency, Alkalinity, TSS, TDS/salinity, NO<sub>3</sub>-N, PO<sub>4</sub>-P, calcium, magnesium, BOD; Coliforms.
- (e) Also record: smell, colour if any; presence of algae/plankton and macrophytes, and fish; Detailed study of biota will require appropriate protocol. visible sources and nature of pollution around the waterbody  
Record date and time of the day (hr) of sampling  
As far as possible same sampling point every time; record it on map (with reference landmark or GPS)

(2)

प्रशासकीय स्वीकृति निम्नांकित शर्तों के अधीन दिया जाता है :-

1. प्रदत्त स्वीकृति वित्तीय वर्ष 2017-18 के लिए स्वीकृत शोध/अनुसंधान हेतु हो यह सुनिश्चित किया जावे।
2. वेट लैण्ड, रतनपुर परियोजना का डाटा संकलन कार्य को मानसून सीजन में ही पूर्ण कराया जाना है।
3. प्रदाय राशि का पूर्ण उपयोग होने संबंधी प्रमाण-पत्र, व्यय राशि का बिल एवं व्हाउचर्स की फोटो कापी राज्य योजना आयोग छत्तीसगढ़ को उपलब्ध कराया जाना है।
4. परियोजना की शेष नियम एवं शर्तें स्वीकृत कार्य योजना अनुसार होंगी।



(अमिताभ पाण्डा)

सदस्य सचिव

राज्य योजना आयोग

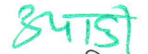
छत्तीसगढ़

कमांक 946 /रायोआ/ मू.स../2017,

नया रायपुर, दिनांक 05/08/2017

प्रतिलिपि :-

1. निज सचिव, मान. उपाध्यक्ष, राज्य योजना आयोग, छ.ग. नया रायपुर।
2. सचिव, छत्तीसगढ़ शासन, वित्त विभाग, मंत्रालय, नया रायपुर।
3. निज सहायक, सदस्य सचिव, राज्य योजना आयोग, छ.ग. नया रायपुर।
4. अवर सचिव, छत्तीसगढ़ शासन, योजना, आर्थिक एवं सांख्यिकी विभाग, मंत्रालय, नया रायपुर।
5. सर्व सदस्य, मुल्यांकन समिति, राज्य योजना आयोग की ओर सूचनार्थ।
6. वरिष्ठ कोषालय अधिकारी, इन्द्रावती कोषालय, नया रायपुर।
7. कुलपति, बिलासपुर विश्वविद्यालय, बिलासपुर छ.ग. की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु।
8. संयुक्त संचालक वित्त, राज्य योजना आयोग, छ.ग. रायपुर स्वीकृत परियोजना के लिए क्रियान्वयन एजेंसी को रू. 5.00 लाख (रुपये पाँच लाख) मात्र जारी करने हेतु सूचनार्थ प्रेषित।



सदस्य सचिव

राज्य योजना आयोग

छत्तीसगढ़

# PROPOSAL

For

**Interdisciplinary-Collaborative Project**

On

**TITLE: 'ECOLOGICAL STUDIES OF MICROBES,  
MACROPHYTES AND PHYSICO-CHEMICAL PROPERTIES  
OF WATER BODIES IN RATANPUR NAGAR PALIKA OF  
BILASPUR DISTRICT IN CHHATTISGARH STATE'**

**By**

**Bilaspur University, Bilaspur (Chhattisgarh)**



*In Collaboration with*

**Department of Botany, Microbiology & Chemistry of  
Affiliated Colleges in Bilaspur University**

**2017**

## PROJECT PROPOSAL FORMAT

Name of the Organization	<b>Bilaspur University, Bilaspur, Chhattisgarh</b>
Address	Old High Court Building, Near Gandhi Chowk, Bilaspur (C.G.)
Status of the Organization:	Institution of Higher Education
Registration & Income Tax Exemption :	Educational Institution, Constituted by the Government of Chhattisgarh and Recognised by University Grants Commission. Not under Income Tax circle.
Year of Registration and Establishment	<b>2012</b> Established by an act of Assembly, Govt. of Chhattisgarh with 168 Colleges in five districts. (Earlier it was Guru Ghasi Das University, Bilaspur. After the up gradation of G. G. University as a Central University, this has been established)
Contact Details	<b>Dr. G. D. Sharma</b> , Vice-Chancellor, Bilaspur University, Bilaspur (C. G.) Mob. – 9406218401 <b>Dr. Indu Anant</b> , Registrar, Bilaspur University, Bilaspur (C.G.), Mob. -7354000006
Background of the Organization	A well established and reputed University of this region – After up gradation of Guru Ghasidas University, Bilaspur as Central University in 2009, an academic Institution of Higher Education, Bilaspur. University has been established by the State government in June, 2012. The University is flourished in all respect governing 168 Govt. and private colleges affiliated in the 05 districts of Chhattisgarh State and catering academic carrier of more than 01 lac 60 thousand students of this region. The colleges under this university carry out undergraduate and postgraduate studies in different streams of Science, Arts, Commerce, Law and Education and Centers of research.
Organization Vision, Mission and Goals	<b>VISION:</b> Towards an Excellence through Equity, Access and Quality Education. <b>MISSION:</b> <ul style="list-style-type: none"> <li>• Aspire to translate collective dream of the Community of the region in to reality.</li> <li>• Create, disseminate and advance knowledge, through instructional and Inter disciplinary and collaborative researches.</li> <li>• Educate and train the Human Resource persons for the development of the State of Chhattisgarh.</li> <li>• Advancement of intellectual, academic, cultural and natural resource development for Socio- economic development of the region.</li> <li>• Appropriate measures to promote quality education in affiliated colleges.</li> </ul> <b>GOALS:</b> <ul style="list-style-type: none"> <li>• To develop innovative and professional instructional programs to cater the needs of students of the State of Chhattisgarh.</li> <li>• To create an ambience for quality teaching-learning and skill development and it's up gradation.</li> <li>• To support students in developing competency in their respective fields of study to participate in emerging global economic opportunities.</li> <li>• To identify the educational, social cultural &amp; industrial needs in the State and plan to create relevant programs.</li> <li>• To further develop infrastructure for continued productivity, competitiveness, of human resources of the University in creating knowledge and research programs in time and space.</li> <li>• To up keep the Administrative and academic reforms in emerging educational and research programmes.</li> <li>• To support teaching, research and Autonomy in the colleges to emerge as potential of excellence.</li> </ul>
Areas of Activity	<b>Higher Education:</b> Teaching & Learning of UG, PG and Ph. D. Program, Research and Creative activities, Examination/Evaluation and providing the Result in UTD and affiliated colleges under its jurisdiction. Social outreach program and Industrial linkage are also under prime activities of this University.
Previous Achievements / Programmes and Interventions	Besides in 'Teaching-Learning' program various achievements have been gained in 'Research' activities. So many National/State level Seminars/Conferences/Workshop, Sports Events (National Boxing Championship), Digital India & National Chhattisgarh Educational Summit & Awards and 14 <sup>th</sup> Chhattisgarh Young Scientist Congress have been organized. Various programs under Swachha Bharat Abhiyan and Social outreach activities adopting villages have been performed by NSS volunteers. University has developed modern laboratories in Microbiology & Bio-Informatics, Computer Science & Application, Food Processing & Technology etc. The affiliated colleges have made significant contributions in Environmental research, Bio-diversity & Natural resources and community outreach programs.
<b>Ratanpur Nagar Palika</b> (Adopted by Bilaspur University, Bilaspur)	<b>Ratanpur</b> is a town and a nagar palika in Bilaspur district in the Indian state of Chhattisgarh, situated at 22.3 <sup>0</sup> N and 82.17 <sup>0</sup> E. It is located about 25 kilometres (16 mi) from Bilaspur on National Highway 200 towards Ambikapur. <b>Ratanpur</b> , originally known as <b>Ratnapura</b> , was the capital of Kalachuris of Ratnapura, who were a branch of the Kalachuris of Tripuri. According to the 1114 CE Ratanpur inscription of the local king Jajjaladeva I, his ancestor Kalingaraja conquered Dakshina Kosala region, and made Tummana (modern Tuman) his capital. Kalingaraja's grandson Ratnaraja established Ratnapura (modern Ratanpur). The town is popular as a religious center and many Hindu devotees come here to offer their prayers and seek the blessings at the Mahamaya Temple, goddess Mahamaya also known as Kosaleswari, as she was presiding deity of Dakshin Kosal (modern Chhattisgarh). Many other temples such as Bhudha Mahadev and Ramtekri are also situated there. Wet lands in Ratanpur Region have played an important role in socio-cultural and economy of the Region( Marothia 2005).

Title of the Project	<p><b>·ECOLOGICAL STUDIES OF MICROBES, MACROPHYTES AND PHYSICO-CHEMICAL PROPERTIES OF WATER BODIES IN RATANPUR NAGAR PALIKA OF BILASPUR DISTRICT IN CHHATTISGARH STATE’</b></p>
Background of Project	<p>Water pollution, traditional management of water, aquatic biotic communities and Public health hazards –</p> <p>Freshwater resources all over the world are threatened not only by over exploitation and poor management but also by ecological degradation. The main source of freshwater pollution can be attributed to discharge of untreated waste, dumping of industrial effluent, and run-off from agricultural fields. Industrial growth, urbanization and the increasing use of synthetic organic substances have serious and adverse impacts on freshwater bodies. It is a generally accepted fact that the developed countries suffer from problems of chemical discharge into the water sources mainly groundwater, while developing countries face problems of agricultural run-off in water sources. Polluted water like chemicals in drinking water causes problem to health and leads to water-borne diseases which can be prevented by taking measures can be taken even at the household level.</p> <p>Indiscriminate disposal of hazardous chemicals, domestic/agriculture/ industrial wastes have caused pollution of ground water as well as of subsurface soil layers. Various processes and mechanisms control the transport of pollutants when they come in contact with soil water system.</p>
Location of Implementation	The entire water reservoir within Ratanpur Nagar Palika of Bilaspur district
Project Objectives (Plan of work)	<ol style="list-style-type: none"> <li>1. Survey of the water reservoir in urban and rural area of Ratanpur Nagar Palika</li> <li>2. Selection of sampling sites and collection of the water samples for micro &amp; macro-phytes periodically</li> <li>3. Analysis of Physical and Chemical parameters of the water samples collected in different seasons from the selected wetlands.</li> <li>4. Microscopic examination of water samples to recognize the microorganisms and micro-phytes</li> <li>5. <i>In Vitro</i> culture of water samples in different media and isolation of the microbes.</li> <li>6. Identification and Characterization of isolated Microorganisms.</li> <li>7. Identification and Characterization of collected micro &amp; macro-phytes.</li> <li>8. Survey of public health in local settlements utilizing such water by different means</li> <li>9. Floristic study of polluted water bodies/reservoirs and adjoining agriculture and residential area.</li> <li>10. Conduction of ‘Public Awareness Program’ under outreach activity and contributing to “Swachh Bharat Abhiyan”.</li> <li>11. Providing the reports to concern organizations for proper treatment of disposals to control over the water pollution in this state.</li> </ol>
A brief review of the work already done in this field	<p>As an important factor, inorganic and organic components in groundwater have been studied by several workers. Jeevan Rao and Shantaram (1995) investigated the Manganese and Zink content of groundwaters around Hyderabad. Singh et. al. (1995) investigated the occurrence of Bromide in groundwaters of Churu district of Rajasthan. A series of investigation conducted at school of Environmental studies, Jadavpur University, has revealed arsenic contamination of groundwater in seven district of West Bengal – which is said to the biggest arsenic calamity in the World (Chatterjee et. al., 1995; Das et. al., 1994, 1995, 1996; Mandal et. al., 1996). Iqbal et. al., (1995) Assessed the water quality of the upper lake of Bhopal after the leakage of Methyl-isocyanides (MCI) gas from the Union carbide factory, Bhopal. Their study revealed the coliform bacteria increased at the onset of summer and dropped to minimum during monsoon against the permissible level of 1/100 ml. has recommended by the WHO for water to be used for domestic purpose. Lopez et. al. (1995) described a new quick and simple method for determination of the joint concentration of the 6 polycyclic aromatic hydrocarbons (PAHS), designated by current legislation of Spain as quality indicators for usable water. Wang et. al., (1995) investigated formation chloroform during water disinfection with chlorine dioxide.</p> <p>Outside the state the qualitative assessment of pond by several water &amp; river has been studied Singh &amp; Singh (1990) have made pollution studies on river Subernrekha around industrial belt of Ranchi. Dhanselvi and Perumalsamy (1991) investigated bacterial contamination of well water in Coimbatore district of Tamil Nadu. Rao et. al (1991) studied groundwater quality in the industrial areas in and around Hyderabad.</p> <p>Inhabiting microbial flora of usable water has also been studied by a number of workers. Dhanselvi &amp; Perumalsamy (1991) investigated bacterial contamination of well water in Coimbatore district of Tamil Nadu. Munuera (1994) undertook detailed microbiological analysis of bottled drinking water commercialized in Seville, Spain. Vanderslice &amp; Briscoe (1995) assessed the effect of drinking water quality on diarrhea diseases in good and poor sanitary conditions. Kheiralle et. al. (1995) undertook bacteriological and chemical studies of on-roof reservoirs in Cairo, Egypt.</p> <p>Several investigators have worked on different stretches of Cauvery and have dealt with the various physico-chemical and biological aspects (Somashekar 1985; suvarna &amp; Somashekar 1997; Venkateswaralu, 1986). Many other surface water bodies of India have also been investigated in details ( Chauhan, 1991; Mitra, 1995; Murthy , et. al, 1997; Sinha et. al. 1989; Sharma &amp; Mathur , 1997 ).</p> <p>Water pollution concerns within the rural and municipal areas are therefore not limited to potable water criteria but include the effects on general health of humans, livestock, agriculture and aquatic life (Ahmed <i>et al.</i>, 2011). Quality of an aquatic ecosystem is dependent on the physico-chemical qualities of water as also on the</p>

	<p>biological diversity of the system (Ghavzan et al., 2006; Tiwari et al., 2006; Tas and Gonulol, 2007 Singh and Sahi 2017).The seasonal variations in different physico-chemical parameters of water from ponds and other reservoirs were studied and analyzed the water quality by various workers, as reported from different regions of India and abroad; such as in India - from rural area of Nasik district of Maharashtra (Tidame <i>et al.</i>, 2012), Sagar city of Madhya Pradesh (Pathak <i>et al.</i>, 2012), Jhansi City, Uttar Pradesh (Arya <i>et al.</i>, 2011), Varanasi and Bhadohi, Uttarpradesh (Upadhyay <i>et al.</i>, 2010), Village Lohara, at Yavatmal in Maharashtra (Bhagat, 2008), a rural area of Barak Valley, Assam (Bhuiyan <i>et al.</i>, 2007), Bhitarkanika National Park area of Orissa (Mishra <i>et al.</i>, 2008), Bharawas pond in district Rewari, Haryana (Sahni <i>et al.</i>, 2012).</p> <p>The physico-chemical characteristics of the water of fish ponds located near Bhadra project region, Karnataka was analyzed by Kiran (2010). The monthly changes in physico-chemical parameter in Tamadalg water tanks at Kolhapur district, Maharashtra has studied by Manjare <i>et al.</i> (2010); various water quality parameters of twenty stations on the surface water of Ujjani Dam, Solapur district, Maharashtra has been performed by Sangpal <i>et al.</i>(2011) and stated that the dam water is subjected to sever domestic and industrial pollution. The regional and seasonal variation of some physico-chemical parameters of Gandhisagar, Ambazari, Futala and Gorewada Lakes in Nagpur City of Maharashtra were studied by Puri <i>et al.</i> (2010). The physico-chemical and biological analysis of sewage-fed Varthur Lake, Bangalore, India was conducted and carried out its treatment capabilities in terms of BOD removal, nutrient assimilation and self-remediation were assessed (Mahapatra <i>et al.</i>, 2011) and at two station near Kullanchawadi, Cuddalore, Tamil Nadu has been studied by Usha <i>et al.</i>( 2006). Some studies on the water bodies of Ratanpur are available.</p>
Primary Beneficiaries	<p>Most of the Rural and Urban Public of such region of this state. The Scientific information so (Sharma, 2016, Global 2016) generated will be transmitted among the local masses for their clean water availability applying BCC methods (schools, health centres and other social programs) and organizing Public Awareness Programs.</p>
Baseline / Needs Assessment Results	<p>Level of water pollution, its cause and significant factors, potentiality and frequency of harmful impact for human society and local flora &amp; fauna. Remedial action will be based on findings of the study sector concerned. Use of natural recourses (especially plants), traditional or scientific practices and social outreach program would be helpful to resolve the problems of human health, cattle health, agriculture and environment.</p>
Project Plan – Intervention	<p><b>First Year –</b></p> <ol style="list-style-type: none"> <li>1. Survey of the water Bodies in urban and rural area of Ratanpur Nagar Palika</li> <li>2. Determination of sampling sites and collection of the water samples for micro &amp; macro-phytes periodically</li> <li>3. Analysis of Physical and Chemical parameters of the water samples collected from the entire sampling</li> <li>4. Microscopic examination of water samples to recognize the microorganisms and micro-phytes</li> <li>5. <i>In Vitro</i> culture of water samples in different media and isolation of the existing microbes.</li> <li>6. Identification and Characterization of isolated Microorganism.</li> </ol> <p><b>Second Year –</b></p> <ol style="list-style-type: none"> <li>1. Identification and Characterization of collected micro &amp; macro-phytes.</li> <li>2. Survey of public health in local settlements utilizing such water by different means</li> <li>3. Floristic study of polluted water bodies/reservoirs and adjoining agriculture and residential area.</li> <li>4. Conduction of ‘Public Awareness Program’ under outreach activity and contributing to “Swachh Bharat Abhiyan”.</li> <li>5. Providing the reports to concern organizations for proper treatment of disposals to control over the water pollution in this state. 9. Phytoremediation of Pollutants as derived from water bodies.</li> </ol>
Programme Strategies/Implementation Techniques	<ul style="list-style-type: none"> <li>• Survey, Sampling and collection of water samples from the water reservoirs of this region</li> <li>• Physical and Chemical analysis of water samples from different sites, using techniques provided by APHA, 1998.</li> <li>• Microbiological study employing laboratory techniques for isolation &amp; identification of microorganisms and determination of the cause of health hazards.</li> <li>• Floristic study based on ecological principle and assessment of local micro/macro flora</li> <li>• Social outreach activities in collaboration with schools, Public health organizations, NGOs, NSS, various communities and organizing workshops/canvassing involving local bodies and Gram Panchayat.</li> </ul>
Results expected and Measurable Outcomes	<p>The increasing severity of water pollution if not checked will be the next major killer of mankind (secondary effect of water pollution). The Physical, Chemical and Microbiological analysis will help to work out the treatment the polluted water and suggest the improvement of traditional water use.</p> <p>In this regards finding would be provide the way to control over water pollution, preventive measure of health hazards, to create awareness among rural public of this region and may be able to facilitate the healthy society in healthy environment.</p>
Project Evaluation Plan	<p>Progress of project work will be Evaluated/Reviewed by the team of Experts and funding agency periodically i.e. annually.</p>

Manpower Planning - Staff Roles and responsibilities	<p><b>Team of Investigators:</b> Planning, Execution, Monitoring and Reporting the entire Project work.  <b>[Coordinator investigator -</b> Responsibilities of Coordination (field works &amp; lab. works), Public Awareness, data collection and analysis and reporting.  <b>Member investigators -</b> Responsibilities of concerned work execution (field works &amp; lab. works) as well as involvement in all program]  <b>Project Assistant-1:</b> Documentation, correspondence, data storage and other official work Assistance in field work and organizing various field programs. Maintenance of laboratory and assist to Investigators in laboratory.  <b>Volunteers</b> (Research scholars, M. Sc. Students and NSS cadets): Involvement in program concerned like sample collection, sample assessment and public awareness program.</p>																																																												
Budget Expenditure - Recurring & Non Recurring (Detailed break Up)	<p style="text-align: center;"><b>==BUDGET ESTIMATES==</b></p> <p><b>Non-Recurring:</b></p> <table border="1" data-bbox="451 520 1479 695"> <thead> <tr> <th>Head/Subhead</th> <th>1<sup>st</sup> Year</th> <th>2<sup>nd</sup> Year</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>A. Equipments: Autoclave, Centrifuge, pH meter, Turbid meter, BOD Incubator, Laminar air flow, Electronic balance, Refrigerator etc.</td> <td style="text-align: right;">300000=00</td> <td style="text-align: right;">00</td> <td style="text-align: right;">300000=00</td> </tr> <tr> <td>B. ICT/Computer equipments.</td> <td style="text-align: right;">130000=00</td> <td style="text-align: right;">20000=00</td> <td style="text-align: right;">150000=00</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>430000=00</b></td> <td style="text-align: right;"><b>20000=00</b></td> <td style="text-align: right;"><b>450000=00</b></td> </tr> </tbody> </table> <p><b>Recurring:</b></p> <table border="1" data-bbox="451 726 1479 1073"> <thead> <tr> <th>A. Emoluments For Manpower</th> <th>1<sup>st</sup> Year</th> <th>2<sup>nd</sup> Year</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Project Investigators (5) Conveyance allowances Rs.15000/Anum.</td> <td style="text-align: right;">75000=00</td> <td style="text-align: right;">75000=00</td> <td style="text-align: right;">150000=00</td> </tr> <tr> <td>Project Assistant (01) Rs.6000/month</td> <td style="text-align: right;">72000=00</td> <td style="text-align: right;">72000=00</td> <td style="text-align: right;">144000=00</td> </tr> <tr> <td style="text-align: center;"><b>Total</b></td> <td style="text-align: right;"><b>147000=00</b></td> <td style="text-align: right;"><b>147000=00</b></td> <td style="text-align: right;"><b>294000=00</b></td> </tr> <tr> <td><b>B. Glass wares and Chemicals</b></td> <td style="text-align: right;"><b>140000=00</b></td> <td style="text-align: right;"><b>10000=00</b></td> <td style="text-align: right;"><b>150000=00</b></td> </tr> <tr> <td><b>C. ICT/Computer facilities</b></td> <td style="text-align: right;"><b>5000=00</b></td> <td style="text-align: right;"><b>15000=00</b></td> <td style="text-align: right;"><b>20000=00</b></td> </tr> <tr> <td><b>D. Field work facilities (Vehicle) Riring etc.</b></td> <td style="text-align: right;"><b>15000=00</b></td> <td style="text-align: right;"><b>5000=00</b></td> <td style="text-align: right;"><b>20000=00</b></td> </tr> <tr> <td><b>E. Stationeries &amp; Secretariats</b></td> <td style="text-align: right;"><b>10000=00</b></td> <td style="text-align: right;"><b>20000=00</b></td> <td style="text-align: right;"><b>30000=00</b></td> </tr> <tr> <td><b>F. Contingencies</b></td> <td style="text-align: right;"><b>12000=00</b></td> <td style="text-align: right;"><b>24000=00</b></td> <td style="text-align: right;"><b>36000=00</b></td> </tr> <tr> <td style="text-align: center;"><b>TOTAL (A+B+C+D+E+F)</b></td> <td style="text-align: right;"><b>329000=00</b></td> <td style="text-align: right;"><b>221000=00</b></td> <td style="text-align: right;"><b>550000=00</b></td> </tr> <tr> <td><b>Grand TOTAL (Non-Recurring+Recurring)</b></td> <td style="text-align: right;"><b>759000=00</b></td> <td style="text-align: right;"><b>241000=00</b></td> <td style="text-align: right;"><b>1000000=00</b></td> </tr> </tbody> </table> <p style="text-align: right;"><b>TEN LAKH ONLY</b></p>	Head/Subhead	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total	A. Equipments: Autoclave, Centrifuge, pH meter, Turbid meter, BOD Incubator, Laminar air flow, Electronic balance, Refrigerator etc.	300000=00	00	300000=00	B. ICT/Computer equipments.	130000=00	20000=00	150000=00	<b>Total</b>	<b>430000=00</b>	<b>20000=00</b>	<b>450000=00</b>	A. Emoluments For Manpower	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total	Project Investigators (5) Conveyance allowances Rs.15000/Anum.	75000=00	75000=00	150000=00	Project Assistant (01) Rs.6000/month	72000=00	72000=00	144000=00	<b>Total</b>	<b>147000=00</b>	<b>147000=00</b>	<b>294000=00</b>	<b>B. Glass wares and Chemicals</b>	<b>140000=00</b>	<b>10000=00</b>	<b>150000=00</b>	<b>C. ICT/Computer facilities</b>	<b>5000=00</b>	<b>15000=00</b>	<b>20000=00</b>	<b>D. Field work facilities (Vehicle) Riring etc.</b>	<b>15000=00</b>	<b>5000=00</b>	<b>20000=00</b>	<b>E. Stationeries &amp; Secretariats</b>	<b>10000=00</b>	<b>20000=00</b>	<b>30000=00</b>	<b>F. Contingencies</b>	<b>12000=00</b>	<b>24000=00</b>	<b>36000=00</b>	<b>TOTAL (A+B+C+D+E+F)</b>	<b>329000=00</b>	<b>221000=00</b>	<b>550000=00</b>	<b>Grand TOTAL (Non-Recurring+Recurring)</b>	<b>759000=00</b>	<b>241000=00</b>	<b>1000000=00</b>
Head/Subhead	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total																																																										
A. Equipments: Autoclave, Centrifuge, pH meter, Turbid meter, BOD Incubator, Laminar air flow, Electronic balance, Refrigerator etc.	300000=00	00	300000=00																																																										
B. ICT/Computer equipments.	130000=00	20000=00	150000=00																																																										
<b>Total</b>	<b>430000=00</b>	<b>20000=00</b>	<b>450000=00</b>																																																										
A. Emoluments For Manpower	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total																																																										
Project Investigators (5) Conveyance allowances Rs.15000/Anum.	75000=00	75000=00	150000=00																																																										
Project Assistant (01) Rs.6000/month	72000=00	72000=00	144000=00																																																										
<b>Total</b>	<b>147000=00</b>	<b>147000=00</b>	<b>294000=00</b>																																																										
<b>B. Glass wares and Chemicals</b>	<b>140000=00</b>	<b>10000=00</b>	<b>150000=00</b>																																																										
<b>C. ICT/Computer facilities</b>	<b>5000=00</b>	<b>15000=00</b>	<b>20000=00</b>																																																										
<b>D. Field work facilities (Vehicle) Riring etc.</b>	<b>15000=00</b>	<b>5000=00</b>	<b>20000=00</b>																																																										
<b>E. Stationeries &amp; Secretariats</b>	<b>10000=00</b>	<b>20000=00</b>	<b>30000=00</b>																																																										
<b>F. Contingencies</b>	<b>12000=00</b>	<b>24000=00</b>	<b>36000=00</b>																																																										
<b>TOTAL (A+B+C+D+E+F)</b>	<b>329000=00</b>	<b>221000=00</b>	<b>550000=00</b>																																																										
<b>Grand TOTAL (Non-Recurring+Recurring)</b>	<b>759000=00</b>	<b>241000=00</b>	<b>1000000=00</b>																																																										
<b>LIST OF Referees:</b>	<p><b>Dr. E. N. Siddique, (Retired) Professor in Botany, Binoba Bhawey University, Hazaribag, Jharkhand.</b>  <b>Dr. S. K. Sahu, Professor &amp; Head, Department of Environmental Science, Sambalpur University, Odisha.</b>  <b>Dr. A. K. Shukla, Professor in Botany, Indira Gandhi National Tribal University, Amarkantak, MP.</b></p>																																																												


**INVESTIGATOR TEAM:**

**Principal Coordinator : Prof. G.D. Sharma, Vice-Chancellor, Bilaspur University, Bilaspur (C.G.)**

**Coordinator - Dr. D. K. Shrivastava, Department of Botany and Microbiology, Govt. E. Raghavendra Rao Postgraduate Science College, Bilaspur.**

**Member - Dr. P. K. Singh, Department of Chemistry, Govt. T. C. L. College, Janjgir, Dist. Janjgir-Champa (C.G.)**  
**Investigatros Dr. Rashmi Parihar, Department of Microbiology, Govt. E. Raghavendra Rao Postgraduate Science College, Bilaspur**  
**Dr. Seema Berolkar, Department of Microbiology & Bioinformatics, Bilaspur University, Bilaspur.**  
**Dr. Renu Nayar, Department of Chemistry, D. P. Vipra College, Bilaspur.**

[Bio-data of Investigators are enclosed]

  
**(Prof.G.D.Sharma)**  
 Bilaspur University  
 Bilaspur (C.G.)