

# **The Annual Quality Assurance Report (AQAR) of the IQAC (2013-14)**

## **Part – A**

### **1. Details of the Institution**

**1.1 Name of the Institution** College of Commerce, Patna

**1.2 Address Line 1** Lohianagar

**Address Line 2** Kankarbagh

**City/Town** Patna

**State** Bihar

**Pin Code** 800 020

**Institution's e-mail address:** cocpatna@hotmail.com

**Contact Nos.** 0612-2350136

**Name of the Head of the Institution:** Prof. (Dr.) Baban Singh

**Tel. No. with STD Code:** 0612-2350136

**Mobile:** 91-9431047314

**Name of the IQAC Co-ordinator:** Prof. Jainendra Kumar

**Mobile:** 91-9934034693

**IQAC e-mail address:** iqac@cocpatna.org

**1.3 NAAC Track ID:** BRCOGN13818

**1.4 NAAC Executive Committee No. & Date:** EC date March 08, 2009

**1.5 Website address:** www.cocpatna.org

**Web-link of the AQAR:** www.cocpatna.org/IQAC/AQAR%202013-14.pdf

**1.6 Accreditation Details**

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 <sup>st</sup> Cycle	B	2.92	2009	2009-2014
2	2 <sup>nd</sup> Cycle	-	-	-	-

**1.7 Date of Establishment of IQAC: 15.07.2010**

**1.8 AQAR for the year: 2013-14**

**1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC**

1. AQAR September 2010
2. AQAR July 2011
3. AQAR August 2012
4. AQAR October 2013

**1.10 Institutional Status**

**University** State  Central Deemed Private

**Affiliated College** Yes No

**Constituent College** Yes  No

**Autonomous college of UGC** Yes No

**Regulatory Agency approved Institution** Yes No

(e.g. AICTE, BCI, MCI, PCI, NCI)

**Type of Institution** Co-education  Men Women

Urban  Rural Tribal

**Financial Status** Grant-in-aid  UGC 2(f)  UGC 12B

| Grant-in-aid + Self Financing Totally Self-financing

### 1.11 Type of Faculty/Programme

Arts ✓                      Science ✓                      Commerce ✓                      Law                      PEI (Phys Edu)  
TEI (Edu)                      Engineering                      Health Science                      Management ✓  
Others (Specify)

**1.12 Name of the Affiliating University** Magadh University, Bodh Gaya (Bihar)

### 1.13 Special status conferred by Central/ State Government--

UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University

University with Potential for Excellence UGC-CPE

DST Star Scheme

UGC-CE

UGC-Special Assistance Programme

DST-FIST

UGC-Innovative PG programmes

Any other ✓ (College of Excellence by the State HRD)

UGC-COP Programmes

## 2. IQAC Composition and Activities

2.1 No. of Teachers: 09

2.2 No. of Administrative/Technical staff: 02

2.3 No. of students: 01

2.4 No. of Management representatives: 01

2.5 No. of Alumni: 01

2.6 No. of any other stakeholder and community representatives: None

2.7 No. of Employers/ Industrialists: 01

2.8 No. of other External Experts: 05

2.9 Total No. of members: 21 (Including the Principal as Chairperson)

2.10 No. of IQAC meetings held: 02

2.11 No. of meetings with various stakeholders: Total No. 08

Faculty: 02

Non-Teaching Staff: 01

Students: 02

Alumni: 01

Others [Management Committees]: 02

**2.12 Has IQAC received any funding from UGC during the year?**

Yes ✓            No

If yes, mention the amount    (Rs. 3,00,000 lakh)

**2.13 Seminars and Conferences (only quality related)**

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos.    02        International: None            National: 01

State: None            Institution Level: 01

(ii) Themes: Direct Trainer Skill (DTS) Workshop 01; Seminar-cum-Workshop on ‘Methods in Teaching, learning and Research’.

**2.14 Significant Activities and contributions made by IQAC**

The IQAC held its own meetings and separate meetings with the different wings/stakeholders of the institution *i.e.* with faculty members, alumni, management committees, students and non-teaching office staff members (Total 08). It organized public extension activities (Total 04; one annual STRIDE function, 01 blood donation camp and 02 community service activities with collaboration with the NSS units). It organized a DTS camp and a faculty improvement seminar-cum-workshop on ‘Teaching, learning and research’. The IQAC sketched out its plant of action for 2014-15.

**2.15 Plan of Action by IQAC/Outcome**

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year \*

<b>Plan of Action</b>	<b>Achievements</b>
1. Optimization of Library automation system	Done
2. Renovation works in Arts block and construction of additional class rooms	Renovation works finished. Class rooms constructed (under finishing)
3. Renovation work in Political Science and Economics departments	Finished work
4. To speed up construction works in Girls' Hostel	Work still in progress
5. Construction and renovation works in sports/indoor games complex and gymnasium	Done
6. Renovation works in Science departments and further required instrumentation in biotechnology	Done
7. Tiled flooring and front grilling in Administrative block and other buildings	Done
8. Renovation of students' common rooms, toilets, parking area, roads and sewage system	Done
9. To create separate website for library	Created – <a href="http://www.coclib.org/">www.coclib.org/</a>
10. To hold more seminars and	Altogether twenty five departmental

workshops at departmental level (more frequently)	seminars/workshops and special invited talks were held
11.To have an MOU with organizations like NHRDN, OSD, Bihar, Nidan and Harmony	MOU signed with Harmony and OSD (Organization for sustainable development), Bihar. Proposal for MOU with NHRDN and Nidan pending.
12.Introduction of Masters' degree in Library and Information Science	Introduced and started
13.Proposal to University and State Govt. For changing the name of the college as 'College of Commerce, Arts and Science, Patna'.	Proposal submitted to the university.
14.To approach Horticulture department of the State Govt. For Plant Tissue culture Lab and Polyhouse unit	Proposal mooted but postponed for 2014-15

\* *Academic Calendar of the year as Annexure.* [Not published by the university]

#### 2.15 Whether the AQAR was placed in statutory body

Yes  No

Management

Syndicate

Any other body  (In IQAC)

**Provide the details of the action taken:** The AQAR was approved.

## Part – B

### Criterion – I

#### 1. Curricular Aspects

##### 1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	14	-	-	-
PG	16	-	02	02 (Professional courses)
UG	17 + 08	-	08 (Voc)	08 (Voc)
PG Diploma	01	-	01	01
Advanced Diploma	05	-	05	05
Diploma	05	-	05	05
Certificate	05	-	05	05
Others	-	-	-	-
<b>Total</b>	71	-	26	26

Interdisciplinary	01	-	01	01
Innovative	-	-	-	-

##### 1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option/Open options

Core: All UG level programs in traditional and vocational subjects (65)

Elective options: PG level programs (16); Add-on courses: 08

**(ii) Pattern of programmes:**

Pattern	Number of programmes
Semester	14
Trimester	-
Annual	25

**1.3 Feedback from stakeholders\***

Alumni ✓

Parents ✓

Employers

Students ✓ (*On all aspects*)

**Mode of feedback :** Online Manual ✓ Co-operating schools  
(for PEI)

*\*Please provide an analysis of the feedback in the Annexure*

**1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects:** None

**1.5 Any new Department/Centre introduced during the year. If yes, give details.**

Masters course in Library and Information Science was introduced as new program. In due course, it shall be developed as a separate department under which BLIS and MLIS courses shall run.

**Criterion – II**

**2. Teaching, Learning and Evaluation**

**2.1 Total No. of permanent faculty**

Total	Assistant Professors	Associate Professors	Professors	Others
114	22	70	22	-



**2.2 No. of permanent faculty with Ph.D.: 113****2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year**

Assistant Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
Total posts * sanctioned: 131 Working: 114									

\*Separate posts are not sanctioned assistant professor, associate professor and professor.

**2.4 No. of Guest and Visiting faculty and Temporary faculty: 52****2.5 Faculty participation in conferences and symposia:**

No. of Faculty	International level	National level	State level
Attended	07	21	02
Presented	07	12	-
Resource Persons	01	-	-

**2.6 Innovative processes adopted by the institution in Teaching and Learning:**

Educational tour of the post-graduate students of Botany to Sundarbans conducted in April 2013 to study halophytes and mangrove vegetation was used to teach their adaptive significance and utility for land conservation in classes of M.Sc. Botany.

**2.7 Total No. of actual teaching days during this academic year: 180****2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)**

Multiple choice questions in class tests and in annual university examinations.

**2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop: 15**

**2.10 Average percentage of attendance of students: 75%**

**2.11 Course/Programme wise distribution of pass percentage\*:**

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
B.A. (H)	2470	42	55.5	33	-	88.5
B.Sc. (H)	1800	38	72	22	-	94
B.Com.(H)	2230	30.5	68	31	-	99
M.A.	1024	45	48	47	-	95
M.Sc.	402	51	65	32	-	97
M.Com.	220	39	64	34.5	-	98.5
Voc. courses (graduate)	452	55	69	29	-	98
Add-on	145	74	77.5	18	-	95.5

- % figures rounded above or below 0.5

**2.12 How does IQAC Contribute /Monitor/ Evaluate the Teaching & Learning processes:**

IQAC chairperson and/or coordinator have regular meetings with the Head of the departments, faculty members and coordinators of the courses. At such meetings, recommendations and suggestions are exchanged in regard to different programs, methods of evaluation, periodical tests and students' responses etc. Actions are taken by course coordinators and departmental heads in accordance with the decisions taken.

### 2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	01
UGC– Faculty Improvement Programme	01
HRD programmes	03
Orientation programmes	-
Faculty exchange programme	-
Staff training conducted by the university	-
Staff training conducted by other institutions	02
Summer / Winter schools, Workshops, etc.	05
Others	-

### 2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	06	-	-	-
Technical Staff	114	57	-	-

## Criterion – III

### 3. Research, Consultancy and Extension

#### 3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

A Research Advisory Committee supervises research related activities, suggests improvements and helps faculty members to meet their requirements by coordinating with the principal. IQAC provides inputs to the RAC and the faculties.

#### 3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	03	-	-	03
Outlay in Rs. in lakhs	18,52,600/	-	-	18,52,600/

#### 3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	05	-	-	05
Outlay in Rs. in lakhs	4,77,500/	-	-	4,77,500/

#### 3.4 Details on research publications

	International	National	Others
Peer Review Journals	20	-	-
Non-Peer Review Journals	-	06	10
e-Journals	02	-	-
Conference proceedings	03	-	-

### 3.5 Details on Impact factor of publications:

Range 0.5-2.0 Average h-index Nos. in SCOPUS

### 3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	-	-	-	-
Minor Projects	-	-	-	-
Interdisciplinary Projects	-	-	-	-
Industry sponsored	-	-	-	-
Projects sponsored by the University/ College	-	-	-	-
Students research projects ( <i>other than compulsory by the University</i> )	05 JRF Ph.D. projects ( 5-yr)	UGC	Fellowship amount	-
Any other(Specify)	-	-	-	-
Total	05	-	Rs. 30,000 PM including HRA	-

### 3.7 No. of books published

i) With ISBN No.: 07 **Chapters in Edited Books: None**

ii) Without ISBN No. : None

### 3.8 No. of University Departments receiving funds from - NA

UGC-SAP CAS DST-FIST DPE: None DBT Scheme/funds

### 3.9 For colleges

Autonomy

CPE

DBT Star Scheme

INSPIRE

CE: From Govt. Of Bihar

Any Other (specify)

**3.10 Revenue generated through consultancy: None**

**3.11 No. of conferences organized by the Institution**

Level	International	National	State	University	College
Number			01		01
Sponsoring agencies			Self		Self

**3.12 No. of faculty served as experts, chairpersons or resource persons: 25**

**3.13 No. of collaborations** International: 01 National: 04 Any other

**3.14 No. of linkages created during this year: 02**

**3.15 Total budget for research for current year in lakhs:**

From Funding agency: None From Management of University/College: None

Total: None

**3.16 No. of patents received this year**

Type of Patent		Number
National	Applied	-
	Granted	-
International	Applied	-
	Granted	-
Commercialised	Applied	-
	Granted	-

**3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year**

Total	International	National	State	University	Dist	College
03	02	01	-	-	01	-

**3.18 No. of faculty from the Institution who are Ph. D. Guides and students registered under them: 45/57**

**3.19 No. of Ph.D. awarded by faculty from the Institution: 25**

**3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)**

JRF 05                      SRF                      Project Fellows                      Any other

**3.21 No. of students Participated in NSS events:**

University level: 50                      State level: 105

National level: 03                      International level: None

**3.22 No. of students participated in NCC events:** University level: None

State level: 155                      National level: 04                      International level: None

**3.23 No. of Awards won in NSS:** University level: None                      State level: None

National level: 01 (President Award)                      International level: None

**3.24 No. of Awards won in NCC:** University level: None

State level: 04                      National level: None                      International level: None

**3.25 No. of Extension activities organized**

University forum                      College forum: 01                      NCC: 09

NSS: 12                      Any other: None

**3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility**

- Annual STRIDE function
- Teaching/Sanitation works in slum areas

## Criterion – IV

### 4. Infrastructure and Learning Resources

#### 4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	5.89 acres	None	–	-
Class rooms	21	12	MU fund and local dev. Fund	33
Laboratories	20	02	HRD	22
Seminar Halls	01	-	-	-
No. of important equipments purchased ( $\geq$ 1-0 lakh) during the current year.	Not available	11	UGC and College	-
Value of the equipment purchased during the year (Rs. in Lakhs)	-	15,12,504	Do	15,12,504
Others	-	-	-	-

#### 4.2 Computerization of administration and library

Computerization of Cash section of the has been taken up.

#### 4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	40,520	NA	310	2,12,510	40,830	-
Reference Books	10,776	NA	27	21,450	10,803	-



e-Books	None	-	-	-	-	-
Journals	-	-	-	-	-	-
e-Journals	-	-	-	-	-	-
Digital Database	-	-	-	-	-	-
CD & Video	-	-	-	-	-	-
Others (specify)						

#### 4.4 Technology upgradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Deptts.	Others
Existing	158	04	01	06	-	04	142	01
Added	05	-	03	-	-	05	-	-
Total	163	04	04	06	-	09	142	01

#### 4.5 Computer, Internet access, training to teachers and students and any other programme for technology up-gradation (Networking, e-Governance etc.)

Training was provided to selected teachers and students.

#### 4.6 Amount spent on maintenance in lakhs :

(i) ICT: 22,767/-

(ii) Campus Infrastructure and facilities: 23,45,985/-

(iii) Equipments: 15,12,504/-

(iv) Others: NA

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**Total : 38,81,256/-**

## Criterion – V

### 5. Student Support and Progression

#### 5.1 Contribution of IQAC in enhancing awareness about Student Support Services

IQAC stresses upon the principle of student support system as it believes in the fact that the students may not obtain their full potential till they are provided a good supporting base that caters to them in all respects ranging from education and sports facilities to financial support. But, constraints of funds and provisions play its limiting role. However, IQAC is gradually taking up the issues with the management, institution, university and the state.

#### 5.2 Efforts made by the institution for tracking the progression

#### 5.3 (a) Total Number of students \*

UG	PG	Ph. D.	Others
6682	1647	57	-

\* Excluding Vocational, professional and add-on/self financed courses

(b) No. of students outside the state: 252

(c) No. of international students: none

(d) % of male and female students and two-year category-wise break-up (Including all courses)

No		%	Men	No		%	Women
8206	63			4820	37		

Last Year						This Year					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
6525	925	224	5946	13	13533	6046	798	177	5991	14	13026

Demand ratio 5.4          Dropout % 16.4

#### **5.4 Details of student support mechanism for coaching for competitive examinations (If any)**

Coaching for Bihar Public Service, UPSC, Banking services etc. exams. was carried out by the college.

No. of students beneficiaries: 112

#### **5.5 No. of students qualified in these examinations**

NET 10      SET/SLET 01          GATE 02          CAT 21  
IAS/IPS etc      State PSC 30      UPSC 02          Others

#### **5.6 Details of student counselling and career guidance**

Counselling Cell carried out weekly regular sessions to provide career related suggestions and inputs to students that attended. These sessions are free and carried out by Career Counselling cell with experts from the college and outside.

**No. of students benefitted:** More than 500

#### **5.7 Details of campus placement**

<b>On campus</b>			<b>Off Campus</b>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
02	235	NA	-

#### **5.8 Details of gender sensitization programmes**

Gender sensitization Cell was formed. The Cell had one meeting on principles and recommendations regarding GS.

#### **5.9 Students Activities**

##### **5.9.1 No. of students participated in Sports, Games and other events**

State/ University level: 210      National level: None      International level: None

### **No. of students participated in cultural events**

State/ University level: 18    National level: 01    International level: None

### **5.9.2 No. of medals /awards won by students in Sports, Games and other events**

**Sports:** State/ University level    03 (Chess, Boxing and Hammer Throw)

National level: None

International level: None

**Cultural:** State/ University level: None    National level: None

International level: None

[Several students won certificate and awards at College level]

### **5.10 Scholarships and Financial Support**

	Number of students	Amount
Financial support from institution	-	-
Financial support from government	Welfare scholarships	To SC/ST students
Financial support from other sources	-	-
Number of students who received International / National recognitions	-	-

### **5.11 Student organised / initiatives**

Fairs: State/ University level: 01 (STRIDE)    National level: None

International level: None

Exhibition: State/ University level    -    National level    -

International level -

### **5.12 No. of social initiatives undertaken by the students**

NSS students did take initiatives in regard to Slum children, Pollution issues and health care [Total: 11]

### **5.13 Major grievances of students (if any) redressed:**

None

## **Criterion – VI**

### **6. Governance, Leadership and Management**

#### **6.1 State the Vision and Mission of the institution**

Mission: Catering education to all without any social bias (as usual)

Vision: creating conducive environment for teaching and learning processes to produce quality oriented students

#### **6.2 Has the Institution a management Information System?**

Yes, it has.

#### **6.3 Quality improvement strategies adopted by the institution for each of the following:**

6.3.1 Curriculum Development: Formation of committees to formulate principles and oversee curricular delivery

6.3.2 Teaching and Learning: Regular feedbacks from teachers and HODs

6.3.3 Examination and Evaluation: Class tests for students. Internal examinations

6.3.4 Research and Development: Research Advisory Committee organized a seminar

6.3.5 Library, ICT and physical infrastructure / instrumentation: Library automation strengthened further

6.3.6 Human Resource Management: None

6.3.7 Faculty and Staff recruitment: None

6.3.8 Industry Interaction / Collaboration: Not any new

6.3.9 Admission of Students: Transparency enhanced.

#### 6.4 Welfare schemes for

Teaching	None
Non teaching	None
Students	None

**6.5 Total corpus fund generated:** 81,00,000/ approx.

**6.6 Whether annual financial audit has been done** Yes  No

**6.7 Whether Academic and Administrative Audit (AAA) has been done?**

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	No	-	No	-
Administrative	No	-	No	-

**6.8 Does the University/ Autonomous College declare results within 30 days?**

For UG Programmes Yes No

For PG Programmes Yes  (mostly) No

**6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?** Not applicable

**6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?** Not applicable

**6.11 Activities and support from the Alumni Association:** None in 2013-14

**6.12 Activities and support from the Parent – Teacher Association:** None

**6.13 Development programmes for support staff:** Meetings held

**6.14 Initiatives taken by the institution to make the campus eco-friendly:** Plantation drive done. Concept development for water harvesting and alternative energy uses.

## **Criterion – VII**

### **7. Innovations and Best Practices**

**7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.**

1. Educational excursions
2. Work in Slums
3. Blood donation camps
4. Public extension services (Free clinical helps and tests)

**7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year**

Optimization of Library automation system was completed. Renovation works were done in Arts block and construction of additional class rooms. Finishing works are in progress in new class rooms. Renovation work in Political Science and Economics departments was undertaken and finished. Further works were taken up to speed up construction works in Girls' Hostel. Construction and renovation works were taken up and finished in sports/indoor games complex and gymnasium. Renovation was done in Science departments. Additional instrumentation was obtained in biotechnology. Tiled flooring and front grilling in Administrative block and other buildings were performed. Renovation of students' common rooms, toilets, parking area, roads and sewage system was done. A separate website for library was created – [www.coclib.org/](http://www.coclib.org/)

Twenty five departmental seminars and workshops were held. Masters' degree in Library and Information Science was approved by the University. Proposal was submitted to the University and State Govt. for changing the name of the college as 'College of Commerce, Arts and Science, Patna'.

A proposal was mooted to approach Horticulture department of the State Govt. for Plant Tissue culture Lab and Polyhouse units during 2014-15

**7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)**

1. Vermicomposting and solid waste disposal      2. Public extension activity  
[STRIDE]

*\*Provide the details in annexure (annexure need to be numbered as i, ii,iii)*

**7.4 Contribution to environmental awareness / protection:** Two seminars were held (i) Organic compost production and uses, (ii) Sustainable living strategies

**7.5 Whether environmental audit was conducted?**      Yes      No✓

**7.6 Any other relevant information the institution wishes to add (for example SWOT Analysis)**

The institution is still in the process of trying to obtain a larger open area for extended sports' facilities. It hopes that the State Govt. shall provide lands for the purpose. The strength of the institution, as always, has been its teaching faculty which is one of the strongest in Bihar. As decided, complete ICT-enabled teaching-learning is the ultimate aim.

**8. Plans of institution for next year:** 1. To strengthen infrastructure and optimise the teaching learning process, 2. To enrich library further, 3. To subscribe new journals (online and print-form), 4. To automate the cash department at its full potential, 5. To develop new laboratories, 6. To strengthen feedback system, 7. To provide more basic amenities to teachers and students, and 8. More seminars and symposia



Prof. Jainendra Kumar  
Coordinator, IQAC



Prof. (Dr.) Baban Singh  
Chairperson, IQAC



# Annexure

## Best Practice I

### Solid and waste water treatment through the bioactivity of *Eisenia foetida* (Red wiggler worm)

#### Goal

Aim of the project is to showcase an easy technology to get rid of the city garbage, domestic waste and polluted sewage water and obtain eco-friendly, harmless and organic fertilizer rich in both macro and micronutrients for agricultural/horticultural crops and irrigation water from sewage with the help of an earthworm *Eisenia foetida* (Red wiggler Worm).

#### The Context

Vermicompost helps us in terms of (1) replacement of harmful chemical fertilizers which play hazards with the soil fertility and human health, and (2) removal of garbage and solid waste of the cities/villages in an effective way. It is the product from the action of the intestinal microflora of the worms which digest and modify the useless organic waste into usable fertilizer mass.

#### The Practice

Earthworms have over 600 million years of existence as waste managers in the global ecosystem. Vermi-composting is low or no-energy requiring zero-waste technology, easy to construct, operate and maintain. Earthworms degrade and compost all organic wastes by two ways:

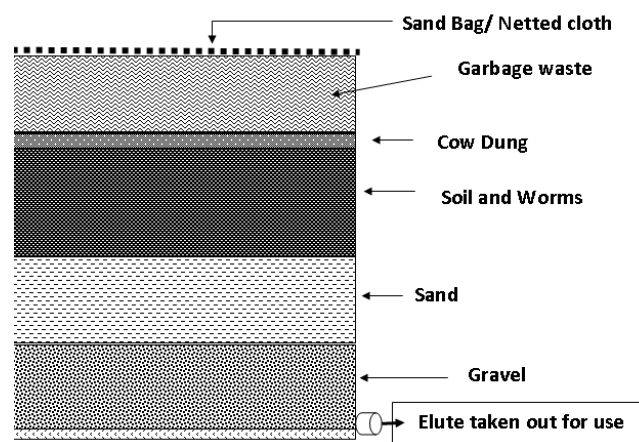
- 1) Through 'enzymatic action' on the carbohydrates, lipids and proteins of the waste components;

2). Through 'proliferating decomposing microbes' in the waste biomass in billions in a short span of time.

A temperature range of 20 ° C to 30° C and a moisture content of 60-75 % is optimum and ideal for good worm function. Given the optimal conditions, earthworms can multiply by 28 i.e. 256 worms every 6 months from a single individual. Up to 3 cocoons per worm per week are produced. From each cocoon about 10-12 tiny worms emerge.

Most earthworms consume about a half their body weight of organics in the waste in a day. *Eisenia fetida* consumes organic matter at the rate equal to its body weight every day. It also detoxifies the content to a good degree by bio-accumulating any toxic chemicals and disinfects it by anti-pathogenic coelomic fluid discharge and devouring pathogens of the waste biomass while degrading it into odourless vermicompost.

The compost bin design (Cross section) is as shown below:



The population of *Eisenia fetida* (also called tiger worm) promotes the growth of beneficial decomposer aerobic bacteria in the waste biomass and also acts as an aerator, grinder, crusher, chemical degrader and biological stimulator. As compared to the conventional composting systems, it takes nearly half the time

to convert waste into vermicompost and the process becomes faster with time as the degrader worms and microbes multiply in number.

Moisture content of 60 - 70 % of total weight of waste is considered to be ideal for vermicomposting. It is an aerobic process and adequate flow of air in the waste biomass is essential for worm function. Worms breathe through their skin and need adequate oxygen in the pit. Lime powder and egg shells should be periodically added for enhance activity.

Earthworms have to be protected from birds, moles, snakes, lizards, toads, rats, certain arthropods, centipedes, leeches, soldier flies and pets (cats and dogs).

% Nutrient content in Vermicompost is: Organic carbon 9.8 to 13.4; Nitrogen 0.51 to 1.61; Phosphorus 0.19 to 1.02; Potassium 0.15 to 0.73; Calcium 1.18 to 7.61; Magnesium 0.093 to 0.568; Sodium 0.058 to 0.158; Zinc 0.0042 to 0.110; Copper 0.0026 to 0.0048; Iron 0.2050 to 1.3313; and Manganese 0.0105 to 0.2038.

### **Evidence of Success**

Management of Solid waste from the campus has been a troublesome exercise. The two vermicompost units are sufficient to get rid of these wastes and leaf litters of the campus. The organic compost can now be used in gardens or exported to needy farmers.

Our results are self explanatory in terms of environmental management. The technology is simple and may be practiced on small or large scale both.

We have appeal to make to the Govt. environmental agencies, municipal corporations, municipalities and NGOs to encourage urban people living either in large houses or apartments to have vermicomposting bins of appropriate size in accordance with their domestic waste mass/day and start the process of disposing their domestic and kitchen wastes by adopting the technology. It shall solve the severe problem of solid waste disposal of the city in a big way. Additionally, the agencies may collect the surplus products from the households and transfer them to the village people/farmers. The approach will benefit in two ways.

## **Problems encountered and Resources required**

It is understood that about one ton of waste can be vermicomposted in the trench of an ideal size every 2 months. Compost unit size is 10' (L) x 3' (W) x 2.5' (H) with bricks sidewalls and plastered base. A compost unit/trench fares well only if located away from the sun. High temperature in summer going up to 40 degree or above in this part of globe creates problem. It is to be protected from rains also. Too much water harms.

The pit needs continuous monitoring, maintenance of moisture, aeration, ambient temperature and feeding. In an institution, where organic waste and garbage is meager in amount, the productivity is quite marred. Cattle dung is regularly required by the worms for consistent and optimum activity. It is also scarce to obtain. Hence, ideal growth/reproduction of worms and compost productivity are affected. Obtaining a quintal of compost per month is only obtainable in such conditions.

## **Best Practice II**

### **Annual 3-day public event STRIDE**

#### **Goal**

The event was first launched in 2001 as a two-day function at which the students of biotechnology used their skill to provide some clinical tests of the people free of cost. It was highly successful and widely praised. The institution decided to make it a major event. The goal was to serve people and make students understand their social commitment.

#### **The context**

As an Institutional Social responsibility, the event was enlarged gradually and the organizer invited various departments to participate over years. It became a 3-day event and participation of students and community people increased year by year. Now, we have made it a mega event that showcases the talent, dedication

and social commitment of our students.

### **The practice**

Over years, graduate students of botany, biotechnology, physics, chemistry, Psychology, B.Sc. IT, B.C.A., Zoology, Medical lab technology, Nutrition of dietetics, OMSP, Commerce, BBA, Hindi, English and other departments, NSS and NCC started participating with their skills that may benefit general mass and community people. The event comprises:

- (i) Free clinical tests by biotech and MLT students supervised by experts and trained technicians e.g. Blood group test, Blood pressure check, BMI test, Colour blindness, TC/DC of blood, Hb %, Blood sugar, Salts, Creatinine blood test and a number of other tests (if required)
- (ii) Students from biological sciences (Botany, Zoology, N&D) exhibit posters related to environment, pathogens, cleanliness, diet, food choices and types, health care and life style, vitamins, minerals, authentic herbal applications, yoga, exercises etc.
- (iii) Students from Psychology with the help of their teachers/supervisors organize camps for psycho-analysis, IQ test, Counseling and rehabilitation etc.
- (iv) Students from OMSP and commerce put exhibits regarding budgeting, saving and expenditure, management and business principles etc.
- (v) Students from Social Sciences have displays on sacred groves, social problems, socio-geographic understanding, socio-economic issues, locations and timings etc.
- (vi) Students from Physics, chemistry, B.C.A. and IT put displays on communications, technology, hardware, software, internet, information flow etc.
- (vii) Students from Literature have posters and displays on contemporary events, language, heritages etc. They also perform one-act plays and drama on social issues and national themes.
- (viii) NCC and NSS students participate to carry out awareness related to

sanitation, environment, water shortage, plantation, medication, drugs, pollution, drinking water etc. among visitors, organize blood donation camps and exhibit their service rules and benefits.

The 3-day event has become a social event, and is held with the slogans – from lab to land / from class room to society.

### **Evidence of success**

The event was named STRIDE as we hold it in the last month of the year (usually just before Christmas starts). It showcases what our current students of B.A./B.Sc./B.Com. learnt during the year to march a big step forward (Stride).

All participants perform their job diligently from 9.00 am to 3.30 pm for the three days of the event and interact with the visiting people from neighborhood and surrounding villages, educate them on issues and provide them with health care solutions. Hundreds of people visit the event and get benefited. The 3-day event has become an identity for the institution and appreciated by one and all including media people, neighbors, village communities, parents, housewives, teachers and students as well.

### **Problems encountered**

The funds required for the show are arranged by the college. We have to invest in chemicals, reagents, stationery items, lunch for participants, tea-coffee, stalls, posters, banners, dais, stages, *pandals* etc. Normally, there is no problem encountered and we treat it as one component of our ISR.