

Annual Report
वार्षिक प्रतिवेदन 2013-14



Indian Institute of Agricultural Biotechnology
भारतीय कृषि जैव प्रौद्योगिकी संस्थान
(Deemed to be University)
Indian Council of Agricultural Research
Garh Khatanga, Ranchi, Jharkhand

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Cover Page

Graphic representation of microbial, plant, fish and animal sciences addressed by the institute; DNA molecule

Back Page

PAGE gel of leaf proteins of *Bt* & non-*Bt* brinjal, Agarose gel image of polyketide synthase gene of Indian lac insect, Single bacterial colonies from *Flemingia macrophylla* root nodule and 2-D protein electrophoresis of *Bt* brinjal leaf

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CONTENTS

Preface	iv
Introduction	1
Overview of the Institute	3
Infrastructure Development : Buildings	6
Infrastructure Development: Manpower	9
Meeting of Important Committees	11
Publication and Publicity	14
Human Resource Development	15
Awards/recognitions	15
Review visits by officials	16
Distinguished visitors	17
Budget	18
Personnel	20

Preface

Indian population has been projected to grow to 1600 million by 2050. This period will also witness significant increase in the proportion of urban population, which would then be half of the total population. These changes would have to be matched with increase in quantum of agricultural production and also qualitative changes in various agricultural produce in view of the preferences of growing urban population and also rapid changes in the same due to health considerations. There will be more emphasis on quality, safety and variety of food produce. Demand for enhanced growth rate of agricultural production would lead to further pressure on natural resources, which would demand significant improvement in efficiency and sustainability of production systems. Water would emerge as a very critical input in agricultural systems coupled with climate change-related issues looming large challenging consistency production. Agricultural land holdings and nature of farmers in India and its counterparts stand in sharp contrast to developed countries, offering unique challenges.

Path-breaking approaches and innovative solutions are needed in ensuring desired direction and growth of agricultural production in the country. Tremendous strides have been made in molecular biology in recent years and biotechnology is considered to hold the key for providing the quantum leap expected in agricultural production, through multifarious approaches. Thus, greater emphasis needs to be given not only for research on development and application of biotechnological tools, products and approaches but also generating quality human resource for spearheading biotechnology mediated revolution of agricultural research in the country.

In view of all the foregoing considerations, Veerappa Moily Committee recommended creation of Deemed University for agricultural biotechnology. Accordingly, Indian Council of Agricultural Research (ICAR), the apex body for agricultural research in the country took the initiative to set up Indian Institute of Agricultural Biotechnology (IIAB) at Ranchi, which was approved in the XII Plan. This institute, slated to be a demand university interfacing plant, animal, fish and microbial biotechnology under a single umbrella. The IIAB will lay emphasis on the emerging areas of Genomics, Bioinformatics, Molecular Breeding, Molecular Diagnostics, Genetic Engineering and Nano-biotechnology for providing quality higher education.

The mission of IIAB is to strengthen basic, strategic and applied research and human resource capacity building in the frontier areas of agricultural biotechnology and to serve as national centre of excellence in Agricultural Biotechnology for undertaking cutting edge research, post graduate, doctoral and post-doctoral education and capacity building, to create platform for interaction and networking of national and international institutions for the application of biotechnology in agriculture and to provide appropriate support for policy framework. The Institute will also forge partnerships with different stakeholders for the development and delivery of products and processes of agricultural biotechnology.

One of the principal outputs of the IIAB would be creation of quality human resource in the frontier areas of biotechnology in a socially inclusive manner as recommended by the Oversight Committee. The research and academic programmes would encompass genotype-to-phenotype mapping of plants/animals, gene discovery, transgenics in the niche areas of Indian agriculture.

June 2014


(R. Ramani)

Officer on Special Duty, IIAB

Introduction

Food, health and livelihood security through sustainable agricultural development is order of the day. Food security, achieved with great efforts during the era of green revolution is under threat due to explosive population growth and there is a looming danger of food scarcity, unless urgent measures are taken for amelioration of the situation. Unfortunately, the natural resource base of agriculture needed for sustaining the production in the country is also shrinking and degrading at an alarming rate which is adversely affecting the production capacity. Demand for agricultural produce is rising rapidly not only due to increasing population, but also due to rise in per capita income and growing demand from industrial sector. Thus, there is an urgent need to understand the severity of the problems confronting agriculture sector, restore its vitality and put it back on higher growth trajectory with the help of modern science.

Improvement in agricultural production is basically two pronged: better management and genetic improvement. Genetic improvement through human intervention dates back to time immemorial with domestication of animals and early agriculture, during early civilization. Such interventions were slow without understanding of underlying scientific principles. Subsequently, advancement of science, especially understanding of genetic principles and mechanisms led to systematic breeding of plants and animals to obtain varieties and breeds of desired characteristics. Classical breeding approaches evolved over a period of time laying strong foundations for improving productivity, quality and other traits in agricultural crops, animals, etc.

Development of biotechnology ushered a new era in agriculture and medicine opening new possibilities and led to very powerful tools for genetic manipulation of organisms. Explosive growth molecular biology led to unravelling gene organization and expression opening up a number

of vistas for using biotechnological approaches in genetic improvement/modification. Genetic engineering techniques have led to precise manipulation of DNA for achieving specific objectives. Biotechnology also provides means for achieving conventional breeding techniques more efficient. Thus, biotechnology needs to be given adequate emphasis, if desired pace of advancements in agriculture is to be achieved. Besides, climate change is also paving way to new challenges of abiotic and biotic stresses in agricultural production systems, which can also be addressed through biotechnological tools.

Biotechnological approaches can lead to mitigation of losses due to crop pests, pathogens and weeds resulting in improvement of productivity and quality. While transgenic crops are wide acclaimed by the scientists of their economic benefits, there is much social resistance due to lack of clear understanding of such mechanisms. Thus the biotechnologists are loaded with additional responsibility of convincing the farmers and groups resisting adoption of so-called genetically modified crops.

Genetic engineering is allowing transfer of useful genes from across the species barrier making the entire biosphere a single gene pool. It offers improvement in virtually every area including agriculture, food and nutrition, animal husbandry, fisheries, environmental bio-security, medical and bio-energy. Biotechnological interventions that have already made global impact and offer scope for revolutionizing the agricultural production and farmer's income include, (i) molecular breeding for accelerated improvement of specific traits using genes available in the germplasm of that plant, livestock or fish species; (ii) molecular diagnostics and vaccines for effective control of livestock diseases; (iii) genetically modified organisms incorporating foreign genes of interest into a target organism; and (iv) nano-biotechnology for biosensor and delivery devices for precision farming.



Besides improvement of plants and animals, biotechnology is also instrumental in production of useful molecules using microbes as biofactories. Significant strides have been in biofermentation techniques and future would witness a wide of range applications of this technology for mass production of economically important products. Genomics aided by bioinformatics is unravelling secrets of life processes at the molecular level, and is the knowledge engine for gene discovery much needed for genetic engineering and molecular breeding. India lags far behind the global leaders, viz., Americas, Europe and China in harnessing

the benefits of biotechnology for enhancing the farmers' income.

Application of biotechnology is quite varied and much would depend in the innovativeness of the scientist. Indian Institute of Agricultural Biotechnology is expected to play a pivotal role in Indian agricultural research by taking up basic and strategic investigations to develop tools and solutions encompassing all spheres of agriculture. It would also help in meeting the demand for quality manpower to meet the increasing demand envisaged in forthcoming years.

Overview of the Institute

Genesis

Demand for agricultural produce is rising rapidly due to growing population, per capita income and demand from the industry. On the other hand, agricultural productivity of the country is under stress due to enhanced burden on natural resources. Thus the nation is facing a dual challenge of attaining the production growth coupled with sustainability. While conventional approaches need to be suitably geared to deliver the desired output, the frontier areas of biotechnology, bioinformatics and nanotechnology could provide path breaking solutions to meet the above challenges. Biotechnological interventions that have already made global impact and offer scope for revolutionizing the agricultural production and farmer's income of the nation.

Establishment of the Indian Institute of Agricultural Biotechnology (IIAB), a step initiated based on the recommendation of the Veerappa Moily Committee will give much needed impetus to the development of quality trained human resource in the frontier areas of agricultural biotechnology in a socially inclusive manner. It will further help faster assimilation and innovation of agricultural biotechnologies in a globally competitive manner to address the problems of agriculture sector.

This institute, slated to be a deemed university interfacing plant, animal, fish and microbial biotechnology under a single umbrella. The IIAB will lay emphasis on the emerging areas of Genomics, Bioinformatics, Molecular Breeding, Molecular Diagnostics, Genetic Engineering and Nano-biotechnology for providing quality higher education. It would also address the social and ethical aspects related to biotechnological products for the agricultural growth of the country.

Mission

Strengthening of basic and applied research and human resource capacity building in the frontier areas of agricultural biotechnology

Mandate

- Serve as national of excellence in agricultural biotechnology for undertaking cutting edge research, post graduate, doctoral and post-doctoral education and capacity building.
- Create platform for interaction and networking of national and international institutions for the application of biotechnology in agriculture and provide appropriate support for policy framework.
- Forge partnerships with different stakeholders for the development and delivery of products and processes of agricultural biotechnology.
- Entrepreneurial and other relevant areas for furthering the application of agricultural biotechnology.

Schools

The following schools have been envisaged in the EFC document of the Institute, encompassing all key areas of biotechnology for cutting-edge research and providing quality higher education.

- School of Genomics and Molecular Breeding
- School of Bioinformatics
- School of Genetic Engineering
- School of Molecular Diagnostics and Prophylactics
- School of Basic and Social Sciences

Courses

The EFC document envisages the following courses, under the ambit of the Institute

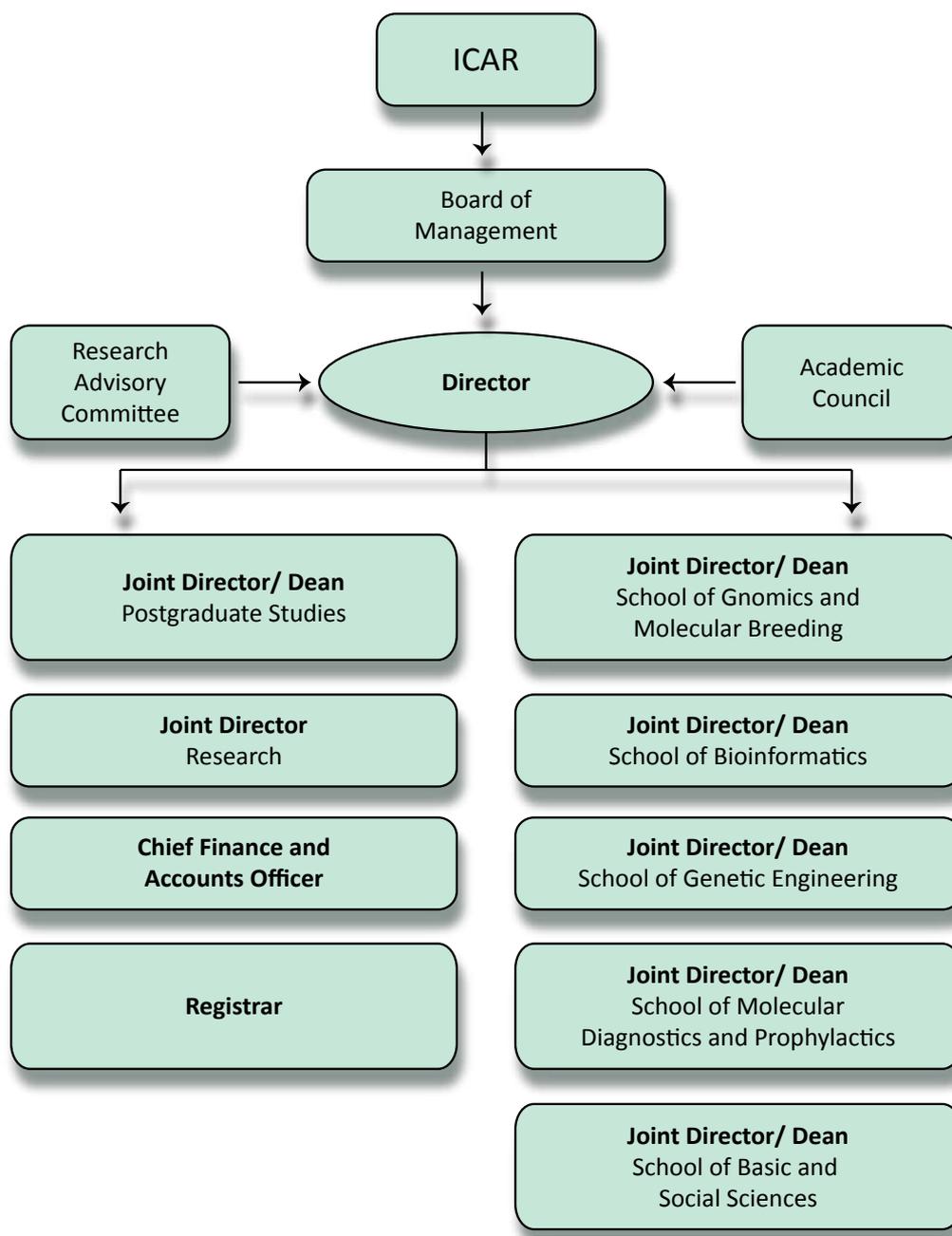
- Master and Doctoral degree programmes in biotechnology with specialization in different areas with fellowships support
- Post-doctoral fellowships in frontier areas of biotechnology offered by the institute and accommodating fellowships sponsored by other agencies
- Regular short, medium and long term training programs.

- International bridge degree programs, including dual / sandwich programs, etc.

Organizational Structure

The IIAB is envisioned as an independent institute under ICAR with Deemed to be University status. The institute would have a modern management and outlook, including

- (i) recruitment of staff on contractual basis (ii) performance based incentives (iii) attractive facilities to the staff for hiring and retaining the most competent staff and (iv) e-governance. The overall management of the IIAB will be vested with the Institute Board of Management supported by Research Advisory Committee and Academic Council.



Organizational structure of the Indian Institute of Agricultural Biotechnology

Output

The principal output of the IIAB would be creation of quality human resource in the frontier areas of biotechnology in a socially inclusive manner as recommended by the Oversight Committee. The research and academic programmes would encompass genotype-to-phenotype mapping of plants/animals, gene discovery, transgenic in the niche areas of Indian agriculture.

The institute will initially produce every year 50 Master (M.Sc.) and 20 Doctoral (Ph.D.) and a large number of trained manpower in specific areas of agricultural biotechnology. The number of M.Sc. and Ph.D. scholars will however increase with time, depending on demand. Besides, the research programmes of IIAB would complement the agricultural research of the country, through its contribution towards novel biotechnological tools, emphasizing on diagnostic kits, vaccines, etc.

The Campus

The resident campus of the IIAB is located in Garh Khatanga, Ranchi, Jharkhand spread out in three

locations viz., IIAB 1, IIAB 2 and IIAB 3 over an area of about 122 acres. These lands designated for establishment of IIAB have been identified by a high-level committee from the farms with ICAR Research Complex for Eastern Region Research Centre, Ranchi and NBPGR Regional Centre, Ranchi. The plots are not contiguous; IIAB 1 and IIAB 2 are separated by private land of farmers, whereas IIAB 2 and IIAB 3 are separated by the farm of NBPGR Ranchi Centre.

The land size of Farm A, Farm B and Farm D are 49.95, 54.31 and 17.29 acres, respectively. The main plot of IIAB is situated on the ring road close to Ranchi - Jamshedpur highway, about 15 km from Ranchi town.

Ranchi, known for its salubrious climate and is emerging as a major educational hub with a number of flagship national institutions of academic excellence. The campuses will have all facilities of modern living students hostel and staff quarters. The development of the campus will incorporate green building concepts and aim to obtain Griha green building rating.



Aerial view showing the campus areas of the Institute (Source: Google maps)

Infrastructure Development: Buildings

The process of taking over the physical charge of the farm and assets allocated to IIAB, Ranchi from ICAR-RCER, Plandu, Ranchi has been completed. The management activities (cleaning, weeding, manuring and termite treatment) in the existing farm allocated to IIAB were carried out. Construction of security wall around all the three campuses allocated for IIAB is almost complete.

Appointment of PMC Agency for Construction

M/s MECON Ltd. Ranchi has been selected as Project Management Consultant (PMC) for planning, designing and constructing the works related to IIAB, Ranchi. The following procedure was adopted for selection of PMC and awarding the work for development of IIAB campus.

- Advertisement documents for EOI was prepared in consultation with Director (Works), ICAR and open tender notice floated inviting quotations from Govt. agencies / PSUs through National/ local newspapers on 11 April 2013 in which seven agencies participated.
- Scrutiny of the technical bids of all the seven firms was carried out and the quotations were opened by the evaluation committee on 27 May 2013 in the presence of all the seven firms. The presentation by all the firms was done before the evaluation committee, but could not be finalized due to inadequate technical criteria for short listing the PMC. Consequently, it was decided by the committee that the EOI may be redrafted and re-advertised.
- The EOI document was redrafted and tender was floated after following all the codal formalities. Four firms participated in the bid which was opened on 29 October 2013 before the evaluation committee in the presence of the respective firms.
- The financial bid was opened on the same day just after presentation by all the four firms.

After thorough comparison of all the attributes assigned for selection of PMC, the committee recommended to award the PMC for planning, designing and constructing IIAB campus to M/s MECON Ltd., Ranchi

- An agreement deed was finalized in consultation with Director (Works), ICAR and signed by OSD, IIAB, Ranchi. The agreement deed was also legally vetted by the standing Counsel, IINRG before signing.

Development of Master Plan

A team of scientists from IIAB along with the engineers of PMC agency visited nine premier biotechnology institute/ laboratories located at Delhi, Chennai, Bangalore and Hyderabad to derive ideas and basic understanding for developing state of the art biotechnology laboratories at IIAB, Ranchi. The team visited International Centre for Genetic Engineering & Biotechnology and National Institute of Plant Genome Research in Delhi, National Centre for Biological Sciences, Jawaharlal Nehru Centre for Advanced Scientific Research and Indian Institute of Science at Bangalore; Centre for DNA Fingerprinting and Diagnostics and National Institute of Animal Biotechnology, CSIR-Centre for Cellular and Molecular Biology, ICRISAT, LaCONES at Hyderabad and Orchid Chemicals and Pharmaceuticals Ltd. in Chennai. The main purpose of the visit was to develop ideas about general layout, design of buildings, labs and other facilities for preparing the master plan of the campus by Project Management Consultant. The concepts in the design of building for energy saving, resource management and green building were obtained during visit to TERI office in Delhi and the research facility in Gurgaon.

Linkages developed

Developed linkages with high level officials of Central/State Govt. namely, Forest department, PWD, Electricity Dept., Water and Sanitation Dept.,

Land Revenue Dept., Road Construction Dept. etc.; Central Ground Water Board, National Geographical Research Institute, Hyderabad for facilitation of basic facilities in development of the campus.

Concept Note and Plan

A concept note was presented by the PMC agency before RAC and inputs given are being incorporated. As per recommendation by 2nd RAC, visit to leading biotechnology and other premier institutions was done. PMC Mecon presented modified concept plan during interaction meeting with Dr S Ayyappan, Secretary DARE and DG, ICAR on 4 May 2014. The suggestions given by him will be taken into account will revising the master plan.

The following components have been proposed to be included in concept plan.

General requirement

- Provisions for different components such as animal house, animal rearing area, ponds, power grid, generator, liquid nitrogen facility, etc have to be earmarked in the master plan very clearly. The layout and design for animal house have special requirements compared to other facilities and animal house model of Orchid Chemicals and Pharmaceuticals, Chennai could be considered.
- Water harvesting and distribution system (gravity based) should be an integral part of the master plan taking into account the topography of the given site. Roof water can be harvested and stored in underground tanks which can be used for green house. Power drawn from solar energy can be used for common area lighting and water heaters and the latest design has to be installed.
- External views from the strategic points should be greenish and refreshing. A miniature water fall can be made using the water (of A.C or any other suitable water) at a central point or at any strategic point. Energy efficient building structures have to be thought of.
- Imaging facility, nanotechnology facilities should be in ground floor where the vibration is nil or minimum. Nanotechnology facility should be a clean area and without any vibration. The clean area standards such as class 100 and class 1000 have to be followed as per the requirement. The walls of the nanoscience labs should be sound and light proof. There is a specialized foundation requirement for these labs.
- Water treatment plant could be an integral part of the master plan wherein the treated water would be used for agriculture or any other suitable purpose. Fire-fighting machinery should also be integral part of the master plan. Incinerators could also be kept in the master plan for waste disposal. Spaces for disposal of regular lab wastes and radioactive wastes have to be earmarked in the plan.
- The floorings have to be made in such a way that they are skid free.
- There can be provision for display of posters or any other activities at the reception lounge where prime information about the institute and its activities can be displayed. There could be a provision for sale counter at the reception.
- The provision for electric supply of different capacities have to give to all buildings and labs. Plug points for charging laptops can be given on the floors or at ample points on the walls in conference and meeting rooms. Enough power back up has to be ensured. There could be few standby Air Handling Units (AHUs) which could be used when there is some problem in the regular AHUs.

- The use of components of green building concept should be maximized including energy saving, natural lighting, etc. based on the techniques available as discussed during visit at TERI.

Lab lay out

- The labs should be open with the sitting spaces for the scientists alongside the lab. The labs should be spacious, well ventilated and as far as possible well lit by natural light. The roof height of the labs can be 6 m. The working space should be wide enough for convenient working of the individual. The work and equipment table should be made of chemical resistant material. The drawers kept under the working tables can be portable. There should be enough storage space for chemicals, plastic wares and glass wares. There has to be dedicated wash shower and eye wash which can be used at the time of emergency in all the labs and they should be accessed easily. There can be a common or meeting room within the lab itself to conduct small lab meetings as and when required. Some lab area has to be allocated for heat generating equipment such as deep freezers which have to be kept in isolation from the main working area.
- Each lab has to be provided with laminar air flow chamber, fume hood area, wash area, sitting space for the students and meeting room. Few tables (low bench) have to be dedicated for table-top equipment and their heights can be

lesser than the regular working table.

- The labs have to be positioned in such a way that whenever people walk out of the lab, there should be some open space for refreshing the mind. To the extent possible, the service people should not enter the lab area. There have to be provisions for them to enter via different corridor for servicing. There should be one cold storage room in each floor.
- There should be a dedicated central instrumentation facility for which access is controlled biometrically. The central instrumentation facility building could be insulated with the help of insulating panel. The air flow to the facility can be through the HEPA filters.
- UPS requirement for the institute can be of three different types: critical, non-critical and super critical. The super critical ones, which are meant for main servers, high end equipment, BSL facilities, etc., should be of high capacity and should have enough back up as well. The critical ones are for regular lab equipment, cold storage, cell culture and work stations. The non-critical ones are for lighting and regular lab use.
- Fire-fighting arrangements in the server and computer rooms should be only through the use of carbon dioxide extinguishers and not by using water. There could be automated fire detection and extinguishing systems in place.

Infrastructure Development: Manpower

The following posts have been sanctioned vide council letter no. 7(1)/2013 - I.A. - III dated 05-03-2013

Name of Post	No. of posts
Director	01
Joint Director (PG studies)	01
Joint Director (Research)	01
Joint Director/ Dean of school	05
Professor	10
Chief Medical Officer	01
Total	19

The following posts have been proposed against the approved/ sanctioned staff for IIAB as per XII plan EFC document :

(A) Managerial

Name of Post	No. of posts
Joint Director (PG studies)	01
Joint Director (Research)	01
Joint Director/ Dean of school	
I) School of Genomics and Molecular Breeding	01
II) School of Bioinformatics	01
III) School of Genetic Engineering	01
IV) School of Molecular Diagnostics and Prophylactics; Nanobitechnology	01
V) School of Basic and Social Sciences	01
Professor	10
Chief Medical Officer	01
Total	18

(B) Teaching/Scientific

Discipline	No. of Posts
Professor / Principal Scientist (10 posts)	
Agricultural Biotechnology	02
Genetics and Plant Breeding	01
Molecular Biology*	02
Animal Biotechnology	01
Fish Biotechnology	01
Bio Engineering*	01
Bioinformatics*	01
Social Science*	01

*Flexi discipline

Associate Professor/ Senior Scientist (20 posts)

Agricultural Biotechnology	03
Genetics and Plant Breeding	01
Agricultural Bioinformatics	01
Nanobiotechnology	01
Plant Physiology	01
Plant Molecular Biology	03
Animal Physiology	01
Veterinary Pathology	01
Plant Pathology	01
Biochemical Engineering	01
Aquaculture	01
Agricultural Microbiology	01
Agricultural Economics	01
Animal Virology	01
Plant Biochemistry	01
Fish Genetics and Breeding	01

Assistant Professor/ Scientist (46 posts)

Agricultural Biotechnology	04
Plant Physiology	02
Animal Physiology	01
Animal Nutrition	01
Animal Biotechnology	04
Aquaculture	02
Plant Biochemistry	02
Animal Biochemistry	01
Mathematics	02
Agricultural Statistics & Informatics	02
Genetics and Plant Breeding	04
Animal Genetics and Breeding	04
Agricultural Economics	01
Agricultural Extension	01
English	01
Agricultural Microbiology	01
Veterinary Microbiology	01
Biochemical Engineering	02
Computer Science	04
Bioinformatics	04
Nanotechnology	02
Total	76

(C) Technical posts

Name of Post	Category	No. of posts
Business Manager/ Sr. Technical Officer	Cat. III	01
Asstt. Medical Officer/Sr. Technical Officer	Cat. III	01
Chief Librarian/ Chief Technical Officer	Cat. III	01
PRO/Sr. Technical Officer	Cat. III	01
Information Officer/Sr. Technical Officer	Cat. III	01
Network Liaison Officer/Sr. Technical Officer	Cat. III	01
Building Maintenance Manager/Technical Assistant	Cat. II	01
Child Care Supervisor/Technical Assistant	Cat. II	01
Phytotron and Green House Manager/ Sr. Technical Officer	Cat. III	01
Farm Manager/ Sr. Technical Officer	Cat. III	03
Asstt. Librarian/Technical Assistant	Cat. II	02
Child Care Assistant/ Technician	Cat. I	02
Nurse/Technical Assistant	Cat. II	02

Technician	Cat. I	20
Technical Assistant	Cat. II	20
Sr. Technical Officer	Cat. III	10
Total		68

(D) Administrative posts

Name of Post	No. of posts
Registrar	01
CF&AO	01
SAO	01
AF&AO	01
Sports Instructor	01
Security Officer	01
Sports and Community Centre Manager	01
Estate Officer	01
Private Secretary	07
Personal Assistant	05
Assistant	16
AAO	06
UDC	07
LDC	15
Total	64

The requisition for posts at (A) except RMP and creation of remaining posts indicated above (B, C & D) have been sent to Crop Sciences Division for further action.

Meeting of Important Committees

First Research Advisory Committee Meeting

The meeting of the first Research Advisory Committee (RAC) meeting of Indian Institute of Agricultural Biotechnology was held at NASC Complex, New Delhi on 07.11.2013. The following members were present

Members present (RAC)	
Dr C D Mayee, Former Chairman, ASRB, New Delhi	Chairman
Dr George John, Ex-Advisor DBT, New Delhi	Member
Dr Deepak Pental, Professor, Dept. of Genetics, University of Delhi, New Delhi	Member
Prof P Balasubramanian, CPMB, TNAU, Coimbatore	Member
Dr R Ramani, Director, IINRG, Ranchi and OSD, IIAB, Ranchi	Member
Dr Nirmal Kumar, Principal Scientist, IIAB, Ranchi	Member Secretary

Invited members

1. Dr KK Sharma, PS, IINRG, Ranchi
2. Dr Thamilarasi K, Sc., IINRG, Ranchi
3. Mr Anees K, Sc, IINRG, Ranchi

Major recommendation given by RAC

1. Manpower recruitment: posting of senior-level administrative and Finance and Accounts

personnel may be done immediately for smooth and speedy implementation of the on-going activities.

2. Infrastructure development: a team can formed which can visit in the country to prepare a design for the buildings.
3. Research:
 - Short term training courses to unemployed PG students in the renowned labs across the country under the banner of IIAB can be held.
 - A database can be prepared which should encompass the very good institute across the globe, which is working in the similar fields.
 - Three fast track proposals (two from IINRG and one from IIT, Delhi) along with budget proposed for funding were recommended by the RAC.
 - The Committee strongly felt that the Institute addresses specific agricultural bottlenecks to eastern India, especially Jharkhand to ensure local relevance and visibility.
 - Relevant information on transgenic to the public and popularize it through social media like facebook may be utilized.



First RAC meeting held at NASC complex, New Delhi on 07 November 2013

Second Research Advisory Committee Meeting

The meeting of the second Research Advisory Committee (RAC) of Indian Institute of Agricultural Biotechnology was held at Camp Office, IINRG, Ranchi on 18-19 March 2014 and following members were present.

Members present (RAC)	
Dr C D Mayee, Former Chairman, ASRB, New Delhi	Chairman
Dr Swapan Kumar Datta, DDG (CS), ICAR, New Delhi	Member
Prof A N Lahiri Majumder, Raja Ramanna Fellow (DAE), Division of Plant Biology, Bose Institute, Kolkata	Member
Prof P Balasubramanian, CPMB, TNAU, Coimbatore	Member
Dr N K Singh, National Professor, NRCPB, Pusa Campus, New Delhi	Member
Dr R Ramani, Director, IINRG, Ranchi and OSD, IIAB, Ranchi	Member
Dr Nirmal Kumar, Principal Scientist, IIAB, Ranchi	Member Secretary



Invited members

1. Members from PMC agency (MECON Ltd. Ranchi & TERI, New Delhi)
2. Dr Thamilarasi K, Sc., IINRG, Ranchi

Major recommendation of RAC

Infrastructure development

- Development of infrastructure comprising of auditorium, conference halls/rooms, exhibition hall integrating a lawn for displaying posters, kindergarten school, parks, quarters, hostels, guest house etc.
- Development of rainwater harvesting and waste water recycling facilities.
- The house recommended to construct pre-fabricated structure with suitable partitioning to accommodate the staff and other facilities (Labs & Classroom) to start the programmes at the earliest.
- A suitable space available in NBPGR building in Farm C located adjoining to the proposed site may be utilized as IIAB Office.



Second RAC meeting held at IINRG, Ranchi on 17-18 March 2014

Research

- The institute should take up only basic and strategic research and not enter into development of varieties, which would be addressed by commodity institutes of ICAR.
- The institute may identify genes; develop markers, tools and techniques, which could be taken up by other specialty institutes of NARS
- RAC recommended the formation of two schools namely (i) Genomics and Breeding and (ii) Bio informatics at the first phase.
- In the initial phase, IIAB may be affiliated with IARI, New Delhi for recognition of its academic programmes.
- The committee strongly recommended immediate sponsorship by IIAB, some Post-Doctoral Fellowships for research work under select priority areas.

First Institute Management Committee Meeting

The meeting of the first Institute Management Committee (IMC) of Indian Institute of Agricultural Biotechnology was held at Camp Office, IINRG, Ranchi on 18-19 March 2014. The following members were present.

Members present (IMC)

Dr R Ramani, Director, IINRG, Ranchi and OSD, IIAB, Ranchi	Chairman
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Dr J S Chauhan, ADG (Seed), ICAR, New Delhi	Member
Dr Shivendra Kumar, Ex. Head, ICAR RCER, Ranchi	Member
Dr (Ms.) Poonam Sikka, PS, CIR on Buffalo, Hisar	Member
Dr SR Bhat, PS, NRCPB, New Delhi	Member
Sri Sujit Kumar Singh, Sr. AO, IINRG, Ranchi	Member

Invited members

1. F & AO, IINRG, Ranchi
2. Dr Thamilarasi K, Sc., IINRG, Ranchi

Major recommendations of IMC

- The member secretary presented the financial status of the Institute for the financial year 2012-13 and 2013-14.
- The revised estimates received from CPWD in all the Farms of IIAB *i.e.*, A, B & D for the expenditure on security wall was discussed.
- Keeping in view the nature of work and enhanced campus area compared to the area in EFC memo, IMC recommended permission of escalated cost of approximately Rs. 30.00 lakh towards security wall construction in IIAB, which will be made from funds under Head "Works".

Publication

Research papers

Kumar N, Singh MK and Dohre AK (2012). Rural Resource management for sustainability of fuel. *Indian Journal of Extension Education*, **48(1&2)**: 21 - 26.

Raja P, Bhattacharya BK, Singh N, Sinha NK, Singh JP, Pandey CB, Parihar JS and Roy MM (2013). Surface energy balance and its closure in arid grassland ecosystems: A case study over Thar desert. *Journal of Agrometeorology*, **15**: 94 - 99.

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Santra P, Mertia RS, Kumwat RN, Sinha NK Mahla HR (2013). Loss of soil carbon and nitrogen through wind erosion in the Indian Thar desert. *Journal of Agricultural Physics*, **13(1)**: 13-21.

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Publicity

Awareness-cum-Training Programme on PPV & FRA Organized



Dr Ramani, OSD, IIAB addressing the farmers about the use of quality seed



Dr NK Sinha explaining the importance of PPV & FR Act, 2001

Indian Institute of Agricultural Biotechnology (IIAB), Garh Khatanga, Ranchi and Protection of Plant Varieties & Farmer's Right Authority (PPV&FRA), New Delhi organized a one-day awareness-cum-training programme on 'Protection of plant varieties and farmer's Right' on 7 March 2014 at Indian Institute of Natural Resins and Gums (IINRG), Namkum, Ranchi.

Dr R Ramani, Director, IINRG and OSD, IIAB inaugurated the programme as Chief Guest.

He emphasized upon the availability of good quality seeds for upliftment of farmers' economy. Dr Jatashankar Choudhary, Director, SAMETI, Jharkhand was the Guest of Honour on the occasion. He appreciated the initiative of IIAB, Ranchi for organizing such type of programme for the farmers and urged the PPV & FRA to organize similar type of events for the extension official. Sri Umakant Dubey, Deputy Registrar, Region Centre, PPV & FRA, Ranchi also graced the occasion. Dr Nirmal Kumar, Principal Scientist, IIAB welcomed the dignitaries and participants; briefed about the programmes, while Sri Umakant Dubey elaborated the role of registration of farmers' varieties. Dr NK Sinha, Senior Scientist, IIAB was Coordinator of the programme. Lectures on different topics were delivered by experts during the training programme. A field visit was also organized for the farmers to acquaint them with latest technologies. A total of 126 progressive farmers, extension personnel and NGO's workers participated in the programme.

Human Resource Development

- Dr. Nirmal Kumar, Pri. Sci. attended training on management development programme on leadership development (a pre-RMP programme) at NAARM, Hyderabad during 26 August to 6 September, 2013.

Awards/recognitions

- Dr Nirmal Kumar Pri. Sci. as external examiner evaluated Ph.D. thesis of Dr Bhim Rao Ambedkar University, Agra.
- Dr Nirmal Kumar Pri. Sci. as external examiner evaluated M.Sc. thesis of Navsari Agriculture University, Navsari, Gujarat.
- Dr NK Sinha, Sr. Sc. reviewed research manuscript for Indian Journal of Agricultural Sciences.

Review visits by officials

Review of progress and Infrastructure development

Visit of Secretary, DARE and Director General, ICAR Dr. S. Ayyappan visited the IIAB campus site on 20 September 2013 and reviewed the progress of Infrastructure development. He also saw the arrangement for foundation stone of the Institute.



Visit of Hon'ble Secretary, DARE & DG, ICAR at IIAB Campus, Ranchi

Visit of RAC team

The RAC team visited IIAB site along with scientists of the institute and representative from the PMC agency on 17/3/2014. The team was shown around various plots of the campus and also the sites for construction of proposed buildings.



Visit of DDG (Crop Science), ICAR along with RAC members at IIAB sites

Distinguished visitors

Date	Name and Address
19/09/2013	Dr NS Rathor, DDG(Engg.), ICAR, New Delhi
20/09/2013	Dr S Ayyappan, Secretary, DARE & DG, ICAR, New Delhi
21/12/2013	Dr NK Krishna Kumar, DDG (Hort.), ICAR, New Delhi
21/12/2013	Dr BP Bhatt, Director, ICAR-RCER, Patna
17/3/2014	Dr CD Mayee, Former Chairman, ASRB, New Delhi
17/3/2014	Dr Swapan Kumar Datta, DDG (CS), ICAR, New Delhi
17/3/2014	Prof AN Lahiri Majumdar, Raja Ramanna Fellow (DAE), Division of Plant Biology, Bose Institute, Kolkata
17/3/2014	Prof P Balasubramanian, Professor, CPMB, TNAU, Coimbatore
17/3/2014	Dr N K Singh, National Professor, NRCPB, New Delhi
17/3/2014	Dr JS Chauhan, ADG (Seed), ICAR, New Delhi
17/3/2014	Dr Shivendra Kumar, Ex. Head, ICAR RCER, Ranchi
17/3/2014	Dr (Ms) Poonam Sikka, PS, CIR on Buffalo, Hisar
17/3/2014	Dr SR Bhat, PS, NRCPB, New Delhi

Budget

Budget Allocation and utilization during 2013-14.

(Rupees in lakhs)

Name of the Head	Non Plan		Plan	
	R.E. 2013-14	Prog. Exp March 2014	R.E. 2013-14	Prog. Exp March 2014
GRANT IN AID CAPITAL				
Works				
(A) Land	0.00	0.00	0.00	0.00
(B) Building	0.00	0.00	0.00	0.00
i. Office Building	0.00	0.00	210.00	210.00
ii. Residential Building	0.00	0.00	0.00	0.00
iii. Minor Works	0.00	0.00	0.00	0.00
Equipments	0.00	0.00	0.00	0.00
Information Technology	0.00	0.00	0.00	0.00
Library Books & Journals	0.00	0.00	0.00	0.00
Vehicle & Vessels	0.00	0.00	0.00	0.00
Live Stock	0.00	0.00	0.00	0.00
Furniture & Fixtures	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00
Total Capital Expenditures	0.00	0.00	210.00	210.00
GRANT IN AID SALARIES (REVENUE)				
Establishment Expenses (Salaries)				
i Establishment charges	50.00	14.90	0.00	0.00
ii. Wages	0.00	0.00	0.00	0.00
iii. Over Time Allowance	0.00	0.00	0.00	0.00
Total Estt. expenses (grant in Aid-Salaries)	50.00	14.90	0.00	0.00
GRANT IN AID GENERAL (REVENUE)				
Pension & Other Retirement Benefits	0.00	0.00	0.00	0.00
Travelling Allowances				
(A) Domestic TA/ Transfer TA	0.00	0.00	12.00	5.90
(B) Foreign TA	0.00	0.00	0.00	0.00
Research & Operational Expenses				
(A) Research Expenses	0.00	0.00	0.00	0.00
(B) Operational Expenses	0.00	0.00	1.00	0.41

Administrative Expenses				
(A) Infrastructure	0.00	0.00	9.00	8.85
(B) Communication	0.00	0.00	0.00	0.00
(C) Repairs & Maintenance				
i. Equipment, Vehicle & Others	0.00	0.00	0.00	0.00
ii. Office Building	0.00	0.00	0.00	0.00
iii. Residential Building	0.00	0.00	0.00	0.00
iv. Minor Works	0.00	0.00	0.00	0.00
(D) Others Admin. Expenses	0.00	0.00	10.00	9.33
Miscellaneous Expenses				
(A) HRD	0.00	0.00	0.00	0.00
(B) Other Items (Fellowship/ Scholarship etc.	0.00	0.00	0.00	0.00
(C) Publicity & Exhibitions	0.00	0.00	0.00	0.00
(D) Guest House Maintenance	0.00	0.00	0.00	0.00
(E) Other Miscellaneous	0.00	0.00	1.00	0.84
Total Grant in Aid- General	0.00	0.00	33.00	25.33
Total Rev (Grant in aid gen. + grant in aid salaries)	50.00	14.90	33.00	25.33
GRAND TOTAL (Capital + Revenue)	50.00	14.90	243.00	235.33
Loans & Advances	0.00	0.00	0.00	0.00

Personnel

The following personnel have been appointed/transferred to the institute :

Name		Post held	Discipline	Joining date in IIAB	Transfer/New appointment
Dr R Ramani, Director, IINRG, Ranchi		OSD, IIAB	Entomology	10/10/2012	Designated as OSD
Dr Nirmal Kumar		Principal Scientist	Agricultural Extension	10/06/2013	Central Institute of Agricultural Engineering, Bhopal, Madhya Pradesh
Dr N K Sinha		Senior Scientist	Seed Technology	09/12/2013	Central Arid Zone Research Institute, Regional Research Station, Jaisalmer, Rajasthan
Dr Seeta Ram Meena		Scientist	Agronomy	21/04/2014	Central Tobacco Research Institute, Rajahmundry, Andhra Pradesh
Mr Shambhu Krishan Lal		Scientist	Agricultural Biotechnology	09/04/2014	New Appointment