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West Bengal University of  
Animal and Fishery Sciences

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**Belgachia, Kolkata - 700 037, West Bengal, India**

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# FOREWORD



**Prof. Purnendu Biswas**  
*Vice Chancellor*  
*West Bengal University of*  
*Animal and Fishery Sciences*

*I*t gives me immense pleasure to present the Annual Report of the West Bengal University of Animal & Fishery Sciences which intends to focus on the major achievements and accolades elicited during the period of 2014-2015.

Agriculture, the most important sector in the Indian economy, is presently facing multiple challenges and crisis. The share of agriculture in the national GDP has been decreasing over a period of years. Despite the crisis situation people depending on agriculture continues to be high an estimated two-thirds of the population are depending on agriculture.

Animal Husbandry, Dairying and Fisheries sectors play an important role in the national economy and in the socio-economic development of the country. These sectors also to play a significant role in supplementing family incomes and generating gainful employment in the rural sector, particularly, among the landless labourers, small and marginal farmers and women, besides providing cheap nutritional food to millions of people. Livestock are the best insurance against the vagaries of nature like drought, famine and other natural calamities.

Today India's livestock sector is economically in a better position compared to agriculture. India's livestock wealth is still the largest in the world. As per the 19<sup>th</sup> Livestock Census held in 2012, India accounts for about 21.23% of buffalo population, 37.28% Cattle, 26.40% Goat, 12.71% of Sheep and 2.01% Pigs out of the total livestock population. Some other species include Mithun, Yak, Horses, Ponies, Mules, Donkeys and Camel which taken together comprise about 0.37%.

India is an unchallenged force in the Milk production sector. In the year 2013-14, India has produced over 140.6 million tones of milk. The production has increased to 132.43 million tons during 2012-13 from 127.9 million tons during 2011-12.



Poultry development in the country has shown steady progress over the years. There has been an increase of poultry population by 12.39% compared to previous census. Egg production was around 66.45 billion in 2011-12, and the poultry meat production is estimated to be about 3.24 million tons in 2014.

The growth of output from the livestock sector was about 4.8 per cent per annum and from fisheries was about 3.6 per cent per annum during Eleventh Plan.

Livestock and fishery sectors play a pivotal role in sustainable agricultural production system for the small and marginal farmers and landless labourers of the country. The well-developed poultry and dairy farming are paving the way for women empowerment for poverty alleviation and rural upliftment. The West Bengal University of Animal & Fishery Sciences is recognized as one of the leading institutions in the eastern region of the country, shouldering the responsibilities of education, research and extension activities in veterinary, dairy and fishery sciences. Furthermore, like many other Agricultural Universities in the country this University can play a crucial role for the upliftment of the livelihood of farming communities of the State.

A large number of small and marginal farmers as well as landless labourers are engaged in backyard poultry keeping, goat, sheep and pig rearing. Besides these, they also maintain cattle and buffaloes in their houses. Mostly women folk are involved in these activities. The growing concern on the widening of gap between demand and supply of quality feeds, like concentrates, and to certain extent green forages as the livestock production system in India are slowly but surely undergoing a transformation with greater emphasis on propagating dairy animals with higher production potential. Focused strategies and concerted efforts are needed to face this challenge. Modification and fortification of conventional feeds should continue for improved nutrition, better digestibility and voluntary feed intake, which in turn, would result in better health, enhanced productivity and reproductive efficiency.

West Bengal is famous for its Black Bengal goat, Garole sheep and also for its indigenous fowl and duck population. Scientists of our university have established the importance of Bonapala sheep and ghongroo pigs. Our state possesses several types of water bodies. An alround holistic development of agriculture, horticulture,

# FOREWORD

## Contd...

livestock and fisheries may result in equitable growth and sustainable development for the state. The university believes in creating knowledge centers, focused modern education system and research. University imparts trainings on the relevant areas for upgradation of knowledge of the farming communities at regular intervals. The teachers and the scientists of the University are engaged in research work for conservation of germ plasm of vulnerable livestock varieties of West Bengal.

Three Krishi Vigyan Kendras of the University presently run at Ramsai, Dist. Jalpaiguri, Digha, Dist. Murshidabad and Ashokenagar, Dist. North 24-Parganas. The process of dissemination of knowledge and techniques has been significantly undertaken by those Krishi Vigyan Kendras. The Directorate of Research, Extension & Farms has been conducting various training programmes on livestock, poultry and fishery aspects for the State Govt. officials and also for the farmers.

The implications of climate change on agriculture including animal husbandry are alarming and several research programmes have been undertaken in these areas. A major research thrust is warranted in areas of various biotic and abiotic stresses for improvement in production, productivity, and quality of produce of our agri-horticulture, fishery and livestock assets.

Quantity of teaching and research activities have received due importance during these years. With the active support and patronage of the Government of West Bengal, I.C.A.R. and other agencies, our University is marching towards progress.

I appreciate the efforts made by the editorial and publication board in bringing out the Annual Report in precision and in an attractive format.. I would like to thank all my colleagues in West Bengal University of Animal & Fishery Sciences for their incredible work and cooperation. I shall look forward for suggestions and comments on the information contained in this publication, which would prove to be very much valuable for future activities.



(Prof. Purnendu Biswas)  
Vice Chancellor



# PROLOGUE



**Ashis Kr. Samanta**  
*Registrar (Actg.)*  
*West Bengal University of*  
*Animal and Fishery Sciences*

It gives me immense pleasure in presenting the Annual Report of West Bengal University of Animal and Fishery Sciences for the period of 2014-2015. On account of its excellent pathway of witness, this esteemed institution established by great visionary in 1995 it strives for achieving outstanding competencies by producing trained manpower as well as research and extension outcomes.

The present Annual Report contains the salient achievements of various activities carried out by the University in the fulfillment of its aim and objectives concerning teaching, research and extension education in Veterinary Sciences, Fishery Sciences and Dairy technology.

The compilation and publication of Annual Report is a collective effort of all the sections and units of the University. It is not possible for any committee to compile and present this report without the active cooperation of all Statutory officers, Head of the Departments, Scientists, Teachers, Officers, Employees of the University for which I am highly grateful.

I express my deep sense of gratitude to the Honourable Vice Chancellor, Prof. Purnendu Biswas, for his valuable suggestions and guidance in bringing out this Annual report of this University.

The efforts put in by the members of Annual Report Editorial Committee comprising Prof. S. Biswas, Director of research, Extension and Farms and others in compiling and editing of the report in the present shape are highly commendable. I place on record my appreciation to all of them.

I wish that the University blossoms further and achieves greater highest of academic excellence.

**(Ashis Kr. Samanta)**  
*Registrar (Actg.)*

# EDITOR'S COLUMN



**Prof. Subhasish Biswas**  
*Director of Research  
Extension & Farms  
West Bengal University of  
Animal and Fishery Sciences*

Agriculture is the largest private enterprise in India. Over 59% of male and 75% of female workers in rural areas are engaged in this sector. But recent trend is shifting to non-farming employment, about 13 million farm workers have changed their employment sector during the last couple of years. It has a very detrimental effect on agricultural sector of the country as agriculture still been considered as labour-intensive vocation in India. The problem needs to be solved by integration of different avenues of agricultural sectors like animal husbandry, horticulture, fisheries, sericulture, and so on. The approach and concept of sustainable means of agriculture should be looked in view of this integrated manner and SAUs like our University, have definite roles to play in this regard. Livestock and dairy farming provide means of sustenance for the farmer-family. Dairy farming is the one and only vocation where by selling milk, farmers make their daily living. Is there any instance where a livestock / dairy farmer has ever committed suicide?

Our University in its arena of operation is primarily involved in the imparting education, conducting need-based research activities in the fields of veterinary, dairy and fishery. It is also implementing some programmes on 'livelihood development' in certain remotest parts of West Midnapore district of West Bengal. Popularizing animal husbandry practices amongst tribal women through the said programmes have changed their way of life and animals have turned into their "ATM" (All Time Money) of life process. The encouragement and growing aspiration towards Animal Husbandry practices, the tribal women felt it necessary to establish Prerona Mahila Prani O Krishi Producers' Company Ltd. a producers' cooperative society. This is perhaps one of the median attempts of such type in the country and the scientists engaged in this endeavour needs appreciation.

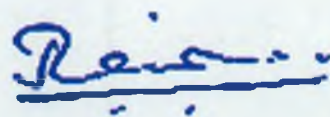


The greatest challenges of the researchers of the animal husbandry sector, are the protection, conservation and development of climate resilient livestock rearing practices. This is more relevant in respect to a sharp decline in the livestock population, as recorded in the 19<sup>th</sup> livestock census where the population of 2012 has decreased than that of 2009.

There are about fifty Research projects now operating in the University and there are some routine and arranged extension programmes where farmers and other stakeholders like technical personnel are being trained in the Directorate of Research, Extension & Farms of the University. The activities of the KVKs under the aegis of the University are in addition to all these. We are mandated to work for the rural people, livestock raisers, fish farmers, agro-industries and targeted towards mitigating agrarian crisis and farming distress through sustainable means. Besides, we have a long way to go in solving the challenges in livestock and fisheries sectors and we are conscious about it. Our future program will definitely reflect such actions to mitigate the challenges, improve productivity and production in livestock and fisheries. The contribution of livestock sub-sector to agriculture is ever increasing and this trend is likely to be continued where contribution of the GDP from livestock in Agriculture will be enhanced to 6-7%, which is now below 5% (4.6%).

The Annual Report for 2014-15, has included all these information and achievements of the University in different fields of its operation and action. The help received by the concerned Deans and HODs of the departments for publication of the Annual Report is gratefully acknowledged. The way the suggestions have poured in from the office of the Vice-Chancellor, Registrar, Controller of Examinations, Finance Officer, have motivated the Editorial Board to publish the Annual Report in time. The guidance, advices and suggestions by Prof. P. Biswas, the Hon'ble Vice Chancellor, for publication of the Annual Report 2014-15 was the most striking force to make this publication somewhat different in its presentation and content and the Editorial Board expresses its sincere gratitude for the same.

I convey my deepest sense of gratitude to the others who have helped to make this endeavour a success.



(Prof. Subhasish Biswas)  
Director of Research  
Extension & Farms & Editor



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1893  
BENGAL  
VETERINARY COLLEGE

B. UNIVERSITY OF ANIMAL AND FISHERY SCIENCES





## EXECUTIVE SUMMARY

The livestock and fisheries sectors are developing at a fast rate of knots throughout India, as the pressure on land is massive in all of its states. As a concomitant of growth, the share of agriculture and allied sectors in gross domestic product (GDP) declined to 15.2 per cent during the Eleventh Plan and further to 13.9 per cent in 2013-14. During, 2012-2013, the contribution of livestock is about 25.63% to the value of the output from Agriculture in terms of Gross Domestic Product (GDP). Livestock production has been growing faster than any agricultural sub-sector and it is foreseen by 2020, the livestock will account for more than half of total global agricultural output in economic terms. To achieve a growth rate of 4% in the agriculture sector as envisaged in the XI plan, the growth in livestock and other allied sectors becomes much essential. Different types of technological interventions were introduced in these sectors in the country to attain this target. This paved away the path for significant improvement in productivity and production and also per capita availability of livestock products. India is among the countries with highest population of cattle, buffalo, goat and poultry, the egg production in 2012-13 was about 70 billion with an annual growth rate of 4.94% and milk production was 132.43 million tones with an annual growth of 3.54%. The per-capita availability of milk is about 296 grams per day till 2012-13. Meat production was 5.95 million tones with an annual growth of 7.97% during the same year.

NSSO at its 66<sup>th</sup> round survey, a total number of workers in farming animals is 20.5 millions. 87% of livestock is under the farmers of marginal, small and semi-medium groups. 70% of rural population is dependent on livestock production as livelihood securing activity.

The State of West Bengal has the potential to enhance the livestock productivity with accelerated application of innovative technologies. The state has produced 4.7 million tones of milk during 2011-12 besides having 63 million poultry, 18.9 million goats and 1.5 million pigs. During 2013-14, India has produced 95.79 lakh tones of fish. West Bengal stood second producing 15.81 lakh tones of fish. Besides this, out of the total fish seed production of 41430 million fries (approx.) in India, West Bengal recorded the production as 15890 million fries (approx.) during 2013-14, which is very encouraging.

As most of the farmers in the state are small and marginal in nature, it is the livestock and fish, which could surely help in the livelihood improvement of the farming population. The efforts of Animal Husbandry and Fisheries are well known by their contribution to the general economy of West Bengal in terms of production. Growth in human population, increase in urbanization, rising domestic incomes and changing lifestyles have led to increased demand for products of animal origin. The knowledge of such products for the consumers became more and more relevant after the promulgation of FASSI from 2011.

The West Bengal University of Animal and Fishery Sciences has already set up a goal in this direction and doing its best through its educational programmes and research activities. In one hand, the University is mandated to the new proposed project – **Farmers FIRST**, which is an ICAR initiative to move beyond the production and productivity and to privilege the complex, diverse and risk-proned realities of majority of farmers enhancing farmers Scientist contact with multi stakeholders participation. These package practices developed in the laboratories are then disseminated to rural farming community.

The West Bengal University of Animal and Fishery Sciences (WBUAFS), the second University of its kind in the country started its journey with a legacy of Century old Bengal Veterinary College on 2nd January 1995 with an objective to serve the State as well as the nation as a whole through imparting quality Education, accomplishing basic and need-based Research and disseminating proven technologies to the rural masses through its Extension wing. Another important aspect of attention would be attracting and retaining youth in agricultural sectors. This would pave to stop the migration of youths to non-agricultural avocations. With these in perspective, the highlights of various activities of the University during the period 2014-2015 are narrated below :



## EXECUTIVE SUMMARY (Contd...)

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### **Institutional :**

The 9<sup>th</sup> convocation was organized to confer degrees to 161 Under-graduate, 119 Post-graduate and 22 Ph.D. students under the three Faculties of the University. The dignitaries of Indian Council of Agricultural Research (ICAR), Ministry of Agriculture, Govt. of India and Veterinary Council of India (VCI) have visited the University to assess the academic activities of Under-graduate course adopted in the University. The University has conducted several Conferences / Seminars / Symposiums during the reporting period. The Central Library with Information Network services is working in full fledged to fulfill the objectives of the University. The shifting of undergraduate studies of Veterinary and Animal Science Faculty to the newly renovated and impeccably maintained campus at Mohanpur has been considered to be a breakthrough to upscale the Veterinary Education in the state of West Bengal.

### **Academic :**

Keeping in view of the globalization in future challenges and relevance to changing needs and aspirations in the field of animal sciences and fishery, the University has fashioned its academic system in very dynamic way. The educational activities in the University are regularly put under evaluation and accordingly modification of course curricula and teaching methodologies are made.

The University offers undergraduate studies in Veterinary and Animal Sciences, Dairy Technology and Fishery Sciences under its three faculties. All the faculties are facilitated with Masters degree courses as well as the doctoral studies. As a program to extend the academic activities and area of importance, a proposal has been initiated to introduce Post-Graduate courses in 'Animal Bio-technology' and 'Avian Science' under the Faculty of Veterinary and Animal Sciences. It also included the proposal for opening of new departments named 'Dairy Business Management' in the faculty of Dairy Technology and 'Fishery Nutrition' under the Faculty of Fishery Sciences to Govt. of West Bengal.

### **Research :**

The University is taking up newer research programmes for the greater interest of the farming community keeping in pace with the ever-changing scenario in the agricultural, animal husbandry and fishery sectors of the nation. During 2014-15, WBUAFS has bagged two prestigious RKVY projects funded by the Animal Resources Development Department, Govt. of West Bengal worth Rs. 15 crores approximately. The University has already come up with several new technologies, which would obviously help to enhance the income and livelihood security of the farming community at the grass root level. Currently 43 numbers of research projects with fund allocation of Rs. 3732.52 lakhs are being carried out by the Faculty members, Scientists and Researchers of the University. Two number of Research projects on Niche Area of Excellence and Outreach are being successfully running under the proficient supervision of the Principal Investigators. Two AICRP on Black Bengal Goat and Post Harvest Technology also needs special mention.

Process is on to take up a few collaborative research projects in the near future.

### **Extension :**

One of the vital features of the University is to render services to farmers and rural community for implementation of their own farming units. The University is continuously undertaking different sorts of activities throughout the State to stretch out its area of action. In its regular course, the University has been organizing various types of need based training programmes, mass contact camps in the form of animal and fish



## EXECUTIVE SUMMARY (Contd...)

health camps, farm and home visits, workshops, seminars, kisan mela, farm produce exhibitions, consultancy and advisory services, on-farm trial, frontline demonstrations, field days and other extension activities benefiting a good number of farmers of the state. The University also offers training for Master trainers' of State level Extension Officers, Resource Persons of SIIGs, Fisher folk of Sundarban and also organizes periodic National level training programmes for Extension Officers of different States. Leaflets, Booklets and Books published and documentary films produced by the University are rich source of disseminating knowledge on latest technologies evolved by the University in livestock and fishery sectors.

During the period, nearly 252 research papers were published in different national and international journals. Apart from this, University has published 70 number of publications of leaflets, booklets, books, newsletter, monographs, manuals, compendiums annual reports and activity highlights.

### **Krishi Vigyan Kendras :**

The Krishi Vigyan Kendras act as a gateway for the farming community to the University. The University has 3 (three) Krishi Vigyan Kendras (KVKs) in Jalpaiguri, North 24 Parganas and Murshidabad districts of West Bengal. All the KVKs have been performing based on the mandates formulated by the Indian Council of Agricultural Research (ICAR) and the University through mutual understanding. Besides the routine jobs like FLD, OFTs, On & Off Campus Farmer's training etc , the KVKs are also associated with special collaborative programmes such as PPV & FR, FOCT etc and participating in Tribal Sub Plan Programs and monitoring jobs of Research Projects of the University.



## **A** ABOUT UNIVERSITY

Necessity gives rise to the search for ways to fulfill them, which in turn lead to the inventions. Even centuries ago, the limitation of land resources availability was felt, which had given rise to alternative means of living using the land and aquatic animal resources. Farmers faced challenges to maintain the flock under their control, giving rise to the need for proper rearing of these living resources following methods known at that time. Proper study of the techniques, development of technology based upon knowledge, desire for improvement in the skills for rearing the animals and fish variety gave rise to gather information in the related fields. When India was under British rule, the erstwhile Bengal Veterinary College was established on 10<sup>th</sup> of January, 1883, which was first of its kind in India. During its century long journey it took the shape of what we see today – The West Bengal University of Animal and Fishery Sciences (WBUAFS). The dreams of the nation builders to promote education, research and extension activities in one of the important sectors of life i.e., the Livestock Sector, has become true with the establishment of the University in 1995.

The University came into existence on 2<sup>nd</sup> January, 1995 vide West Bengal Act of 1995 with the three Faculties—namely Veterinary and Animal Sciences, Fishery Sciences and Dairy Technology. Process for expansion of the existing faculties are ever-continuing and recently a proposal has been approved in the Executive Council and sent for sanction to Govt. of West Bengal. The proposal included introduction of Post-Graduate courses in 'Animal Bio-technology' and 'Avian Science' under the Faculty of Veterinary and Animal Sciences. It also included the proposal for inclusion of new departments named 'Dairy Business Management' in the faculty of Dairy Technology and 'Fishery Nutrition' under the Faculty of Fishery Sciences.

### **A.1. MANDATES OF THE UNIVERSITY**

The mandates of West Bengal University of Animal and Fishery Sciences are as follows :

- A. To impart education in the branches of Veterinary and Animal Sciences, Fishery Sciences, Dairy Technology and allied sciences.
- B. To conduct basic and applied research in the field of Veterinary and Animal Sciences, Fishery Sciences, Dairy Technology for advancement of knowledge and enhancement of productivity to alleviate poverty and economic upliftment of the society.
- C. To undertake the development of such sciences or technologies and the extension thereof to the rural people in co-operation with the concerned Departments of Government of West Bengal.

### **A.2. CAMPUSES OF THE UNIVERSITY**

The University Headquarter is situated at Belgachia, Kolkata which is one of the oldest campuses in the country for imparting education in the fields of Veterinary and Animal Sciences.

The undergraduate courses of the Faculty of Veterinary and Animal Sciences and all courses of the Faculty of Dairy Technology are taught in the Mohanpur Campus of the University in the adjoining Nadia district. Post-graduation studies for the Faculty of Veterinary and Animal Sciences take place in the University Headquarters. The courses of the Faculty of Fishery Sciences are undertaken in the Chakgaria Campus, in Kolkata, which is itself a full fledged unit.

Besides these three Faculties, the University has three Krishi Vigyan Kendras under its aegis in the districts of Jalpaiguri, North 24 Parganas and Murshidabad. These extension centres serve as a direct connection of the University to the rural farmers and general public.





# SET UP OF WBUAFS

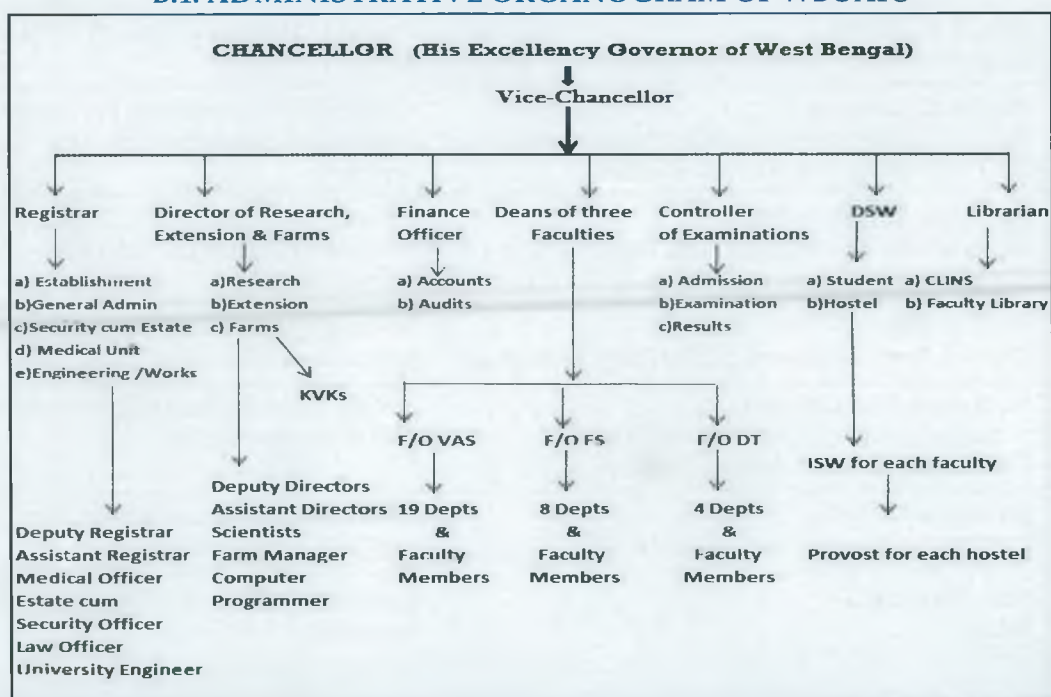


West Bengal University of Animal & Fisheries Sciences (WBUAFS) follows the organizational set up of the State Agricultural Universities (SAUs). Different bodies are constituted time-to-time in the University for management of Education, Research and Extension activities, which are as follows:

- Executive Council (EC)
- Faculty Council (FC)
- Academic Council
- Research and Extension Education Council (REEC)
- Finance Committee
- Board of Examinations
- Board of Studies
- The Executive Council (EC) is the highest policy making body in the University. All sorts of administrative decision are taken in its meetings.
- The Faculty Council (FC) looks after the academic affairs of the University and is the authority for control and maintenance of the standards of education, and examination alongwith the conferment of the degrees and diploma.
- The Academic Council has the control for maintenance of general regulation on teaching and examination system standards, setup in the University.
- The Finance Committee governs the policy for finance and accounts of the University.
- The Research and Extension Education Council (REEC) takes over the control for policy making on Research and Extension Education in the Faculties and Research Stations of the University.

The overall activities of the University taken up for Education, Research and Extension is monitored by the Vice Chancellor with the assistance of Registrar, Director of Research, Extension & Farms, Finance Officer, Controller of Examinations, Deans of the Faculties, Librarian alongwith other various authorities, Committees and Sub-Committees constituted by the University from time to time.

## B.1. ADMINISTRATIVE ORANOGRAM OF WBUAFS



## SET UP OF WBUAFS (Contd...)

### B.2. STATUTORY BODIES :

#### B.2.1. Executive Council

Sl.No.	Name & Designation	Position
1	<b>Prof. P. Biswas, Vice Chancellor</b>	Vice Chancellor & ex-officio Chairman
2	<b>Dr. S. Bose</b> Director of Animal Husbandry & Vety. Services, Govt. of West Bengal	Director of Animal Husbandry & Vety. Services, Govt. of West Bengal, Ex-officio member
3	<b>Smt. Malobika Saha</b> Director of Fisheries, Govt. of West Bengal	Director of Fisheries, Govt. of West Bengal Ex-officio member
4	<b>Sri Dibakar Mukhopadhyay</b> Milk Commissioner, Govt. of West Bengal	Milk Commissioner, Govt. of West Bengal Ex-officio member
5	<b>Prof. Subhasis Biswas</b> Director of Research, Extension & Farms (Actg.), WBUAFS	Director of Research, Extension & Farms, WBUAFS, Ex-officio member
6	<b>Prof. P.K. Senapati</b> Dean, F/O Veterinary and Animal Sciences (Actg.), WBUAFS	Dean, F/O Veterinary and Animal Sciences, WBUAFS, Ex-officio member
7	<b>Prof. B.K. Das</b> Dean, F/O Fishery Sciences (Actg.), WBUAFS	Dean, F/O Fishery Sciences, WBUAFS Ex-officio member
8	<b>Prof. T. K. Maity</b> Dean, F/O Dairy Technology (Actg.), WBUAFS	Dean, F/O Dairy Technology, WBUAFS Ex-officio member
9	<b>Prof. A.K. Samanta</b> Dept. of Livestock Production Management, F/O Veterinary and Animal Sciences	Teacher's Representative, F/O Veterinary and Animal Sciences, WBUAFS, Elected member
10	<b>Dr. Supratim Chowdhury</b> Dept. of Fish Processing Technology, F/O Fishery Sciences	Teacher's Representative, F/O Fishery Sciences, WBUAFS, Elected member
11	<b>Dr. P.K. Roy</b> Dept. of Dairy Engineering, F/O Dairy Technology	Teacher's Representative, F/O Dairy Technology, WBUAFS, Elected member
12	<b>Sri Amlan Bhattacharya</b> Jr. Superintendant, Office of the Dean, F/O Veterinary and Animal Sciences	Elected member from the non-teaching staff of the University
13	<b>Sri Dipanjan Jana</b>	Elected member from the regular students of the University
14	<b>Smt. Mala Saha</b> MLA	Nominated Member of WB Legislative Assembly



## SET UP OF WBUAFS (Contd...)

15	<b>Dr. S.V. Ingle</b>	Representative of the Indian Veterinary Council nominated by the Council
16	<b>Dr. J. K. Jena</b> Director, NBFGR, Lucknow	Representative of ICAR nominated by the Council
17	Vacant	Three members from farmers or producers of the state nominated by the State Govt.
18	Vacant	Three members from farmers or producers of the state nominated by the State Govt.
19	Vacant	Nominated member
20	<b>Prof. A. K. Samanta</b> Registrar (Actg.)	Registrar & ex-officio Non-member Secretary

### B.2.2. Faculty Council

#### 1. Faculty of Veterinary and Animal Sciences

Sl. No.	Name	Position
1	Prof. P. Biswas	Vice Chancellor, Chairman
2	Prof. A.K.Samanta	Registrar, Member
3	Prof. Subhasis Biswas	Director of Research, Extension & Farms, Ex-officio member
4	Vacant	Librarian
5	Prof. P.K. Senapati	Dean, F/O Veterinary and Animal Sciences
6	19 HODs	Head of the departments, F/O VAS
7	Prof. P.K. Senapati	Professor from the respective Faculty, Elected Member
8	Dr. Samar Halder	Reader from the respective Faculty, Elected Member
9	Dr. Joydip Mukherjee	Lecturer from the respective Faculty, Elected Member
10	Sk. Samim Reja	Elected UG student's representative
11	Chandan Saha	Elected PG student's representative
12	Sri A.K. Chakraborty	Secretary, Faculty Council as Member Secretary



## SET UP OF WBUAFS (Contd...)

## 2. Faculty of Fishery Sciences

Sl.No.	Name	Position
1	Prof. P. Biswas	Vice Chancellor, Chairman
2	Prof. A.K.Samanta	Registrar, Member
3	Prof. Subhasis Biswas	Director of Research, Extension & Farms, Ex-officio member
4	Vacant	Librarian
5	Prof. B.K. Das	Dean, F/O Fishery Sciences
6	8 HODs	Head of the departments, F/O FS
7	Prof. T.J. Abraham	Professor from the respective Faculty, Elected Member
8	Dr. Anadamoy Mondal	Reader from the respective Faculty, Elected Member
9	Sri Supratim Chowdhury	Lecturer from the respective Faculty, Elected Member
10	Sutanu Karmakar	Elected UG student's representative
11	Arefin Bostanul	Elected PG student's representative
12	Sri A.K. Chakraborty	Secretary, Faculty Council as Member Secretary

## 3. Faculty of Dairy Technology

Sl.No.	Name	Position
1	Prof. P. Biswas	Vice Chancellor, Chairman
2	Prof. A.K.Samanta	Registrar, Member
3	Prof. Subhasis Biswas	Director of Research, Extension & Farms, Ex-officio member
4	Vacant	Librarian
5	Prof. T.K. Maity	Dean, F/O Dairy Technology
6	4 HODs	Head of the departments, F/O DT
7	Prof. T.K. Maity	Professor from the respective Faculty, Elected Member
8	Dr. S.K. Bag	Reader from the respective Faculty, Elected Member
9	Dr. P.K. Roy	Lecturer from the respective Faculty, Elected Member
10	Ritam Bera	Elected UG student's representative
11	Rajabendra Sarkar	Elected PG student's representative
12	Sri A.K. Chakraborty	Secretary, Faculty Council as Member Secretary

## B.2.3. Board of Studies

Sl.No.	Composition of Board	Position
1	Head of the Department	Chairman & Convener
2	All the full time teachers of the Department	Members



## SET UP OF WBUAFS (Contd...)

### B.2.4. Board of Examinations

Sl.No.	Composition of Board	Position
1	One of the Deans from the three Faculties	Chairman (By rotation)
2	Registrar	Member
3	Deans of Faculties	Member
4	Controller of Examinations	Member Secretary

### B.2.5. Academic Council

Sl.No.	Composition of Council	Position
1	Vice Chancellor	Ex-officio Chairman
2	Director of Research, Extension & Farms	Member
3	Deans of Faculties	Member
4	Registrar	Non Member Secretary
5	Controller of Examinations	Member
6	Librarian	Member
7	All Heads of the Departments from all the Faculties	Member
8	One Lecturer, one Reader and one Professor from each Faculty	Member
9	One UG student from each Faculty and one PG student from the University elected by the regular students in a manner as shall be prescribed	Member
10	Two eminent academicians from the field of Veterinary / Dairy / Fishery Sciences nominated by the Vice Chancellor	Member

### B.2.6. Research And Extension Education Council

Sl.No.	Composition of Council	Position
1	Vice Chancellor	Ex-officio Chairman
2	Director of Research, Extension & Farms	Member Secretary
3	Director of Animal Husbandry & Vety. Services, Govt. of West Bengal	Member
4	Director of Fisheries, Govt. of West Bengal	Member
5	Deans of Faculties	Member
6	Head of all Research Stations and Project Coordinators of State/ICAR/other agencies, Research schemes	Member
7	Three scientists of eminence to be nominated by the Vice-Chancellor for their specialized knowledge, one for each faculty for a period of two years	Member
8	Three progressive farmers associated with Veterinary, Animal Husbandry, Fisheries, Dairy Technology Practices to be nominated by the Vice-Chancellor	Member

## SET UP OF WBUAFS (Contd...)

### B.2.7. Finance Committee

Sl.No.	Composition of Committee	Position
1	Vice Chancellor	Ex-officio Chairman
2	Nominated Member	Member
3	Secretary, Finance Dept., Govt. of West Bengal or his/her representative	Member
4	Secretary, Animal Resources Development Dept., Govt. of West Bengal or his/her representative	Member
5	Secretary, Fisheries Dept., Govt. of West Bengal or his/her representative	Member
6	Director of Research, Extension & Farms	Member
7	Finance Officer	Member Secretary

### B.3. ORGANIZATION OF MEETINGS OF DIFFERENT STATUTORY BODIES

Executive Council		
Sl.No.	Meeting No.	Date
1.	74	26/04/2014
2.	75	01/08/2014
3.	76	22/09/2014
4.	77	04/12/2014
5.	78	19/01/2015
6.	79	29/01/2015
7.	80	24/03/2015

Faculty Councils		
Sl.No.	Meeting No.	Date
<b>Veterinary and Animal Sciences</b>		
1.	67	17/09/2014
2.	68	17/12/2014
<b>Fishery Sciences</b>		
1.	46	17/09/2014
2.	47	17/12/2014
<b>Dairy Technology</b>		
1.	44	17/09/2014
2.	45	17/12/2014





## SFT UP OF WBUAFS (Contd...)

### B.4. TEACHING DEPARTMENTS OF THREE FACULTIES OF WBUAFS

#### F/O. Vety. & Animal. Sciences

Sl No	Name of Department
1	Animal Genetics and Breeding
2	Animal Nutrition
3	Instructional Livestock Farm Complex
4	Livestock Production Management
5	Livestock Products Technology
6	Teaching Veterinary Clinical Complex
7	Veterinary Anatomy & Histology
8	Veterinary Biochemistry
9	Veterinary Epidemiology & Preventive Medicine
10	Veterinary Gynaecology & Obstetrics
11	Veterinary Medicine, Ethics & Jurisprudence
12	Veterinary Microbiology
13	Veterinary Parasitology
14	Veterinary Pathology
15	Veterinary Pharmacology & Toxicology
16	Veterinary Physiology
17	Veterinary Public Health
18	Veterinary Surgery & Radiology
19	Veterinary & Animal Husbandry Extension Education

#### F/O. Fishery Sciences

Sl No	Name of Department
1	Aquaculture
2	Aquatic Animal Health
3	Aquatic Environment Management
4	Fishery Economics & Statistics
5	Fishery Engineering
6	Fishery Extension
7	Fish Processing Technology
8	Fishery Resources Management

#### F/O Dairy Technology

Sl No	Name of Department
1	Dairy Chemistry
2	Dairy Engineering
3	Dairy Microbiology
4	Dairy Technology

### B.5. STATUTORY OFFICERS IN THE UNIVERSITY

Sl. No.	Designation	Name
1	Vice-Chancellor	Prof. P. Biswas
2	Director of Research, Extension & Farms	Prof. S. Biswas
3	Registrar	Prof. A.K. Samanta
4	Finance Officer	Sri M. K. Naskar
5	Controller of Examinations	Prof. A. Goswami
6	Dean, F/O Veterinary & Animal Sciences	Prof. P.K. Senapati
7	Dean, F/O Fishery Sciences	Prof. B.K. Das
8	Dean, F/O Dairy Technology	Prof. T. K. Maity
9	Librarian	Vacant

## SET UP OF WBUAFS (Contd...)

Veterinary Epidemiology & Preventive Medicine	Dr. C. Guha	Professor	M.V.Sc. Ph.D.
	Dr. U. Biswas	Associate Professor	M.V.Sc. Ph.D.
	Dr. P. S. Jana	Assistant Professor	M.V.Sc. Ph.D.
	Dr. A. Chatterjee	Guest Teacher	M.V.Sc. Ph.D.
Veterinary Gynaecology & Obstetrics	Dr. S. Basu	Professor	M.V.Sc. Ph.D.
	Dr.(Mrs.) K. Ray	Associate Professor	M.V.Sc. Ph.D.
	Dr. P. R. Nandi	Senior Lecturer	M.V.Sc.
	Dr. U. Datta	Reader (Re-employed)	M.V.Sc. Ph.D.
Veterinary Medicine, Ethics & Jurisprudence	Dr. S. Sarkar	Professor & Head	M.V.Sc. Ph.D.
	Dr. N. R. Pradhan	Professor (Re-employed)	M.V.Sc. Ph.D.
	Dr. A. Chakrabarty	Professor (Contractual Teacher)	M.V.Sc. Ph.D.
	Dr. C. Lodh	Associate Professor	M.V.Sc. Ph.D.
Veterinary Microbiology	Dr. S. N. Joardar	Associate Professor	M.V.Sc. Ph.D.
	Dr. D. P. Isore	Assistant Professor	M.V.Sc. Ph.D.
	Dr. I. Samanta	Assistant Professor	M.V.Sc. Ph.D.
	Dr. K. Batabyal	Assistant Professor	M.V.Sc. Ph.D.
	Dr. S. Dey	Assistant Professor	M.V.Sc. Ph.D.
Veterinary Parasitology	Dr. J.D. Ghosh	Professor	M.V.Sc. Ph.D.
	Dr. S.C. Mandal	Professor	M.V.Sc. Ph.D.
	Dr. S. Baidya	Assistant Professor & Head	M.V.Sc. Ph.D.
	Dr. (Mrs.)R. Jas	Assistant Professor	MVSc., Ph.D.
	Dr. S. Pandit	Assistant Professor	MVSc., Ph.D.
Veterinary Pathology	Dr. S. K. Mukhopadhyay	Associate Professor	M.V.Sc., Ph.D.
	Dr. S. Pradhan	Assistant Professor	M.V.Sc., Ph.D.
	Dr. N. C. Patra	Assistant Professor	M.V.Sc., Ph.D.
	Dr. R. N. Hansda	Assistant Professor	M.V.Sc.
Veterinary Pharmacology & Toxicology	Dr. T. K. Mandal	Professor	M.V.Sc., Ph.D.
	Dr. T. K. Sar	Head (Sr. Lecturer)	M.V.Sc., Ph.D.
	Dr. R.N. Chattopadhyay	Guest Teacher	M.D. (Pharma)
	Dr. R.K. Dutta	Guest Teacher	M.V.Sc.
	Dr. S. Manna	Guest Teacher	M.V.Sc., Ph.D.
Veterinary Physiology	Dr. P.K. Das	Associate Professor & Head	M.V.Sc., Ph.D.
	Dr. P. R. Ghosh	Assistant Professor (Sr. Scale)	M.V.Sc., Ph.D.
	Dr. K. Das	Assistant Professor	M.V.Sc.
	Dr. D. Banerjee	Assistant Professor	M.V.Sc., Ph.D.
	Dr. J. Mukherjee	Assistant professor	M.V.Sc., Ph.D.
Veterinary Public Health	Dr. C. Debnath	Assistant Professor	M.V.Sc., Ph.D.
	Dr. A. K. Pramanik	Professor (contractual)	M.V.P.H., Ph.D.
	Dr. P. Nandy	Guest lecturer	M.V.Sc.





## SET UP OF WBUAFS (Contd...)

Veterinary Surgery & Radiology	Dr. (Mrs) S. Hazra	Associate Professor	M.V.Sc., Ph.D.
	Dr S.K. Guha	Associate Professor	M.V.Sc., Ph.D.
	Dr S.K. Nandi	Associate Professor	M.V.Sc., Ph.D.
	Dr D. Ghosh	Associate Professor	M.V.Sc., Ph.D.
	Dr A.K.Maji	Lecturer	M.V.Sc., Ph.D.
Veterinary & Animal Husbandry Extension Education	Dr. A. Goswami	Professor	M.V.Sc., Ph.D.
	Dr. D. Ganguli	Lecturer (Sr. scale)	M.V.Sc., Ph.D.

### Faculty of Fishery Sciences

Department	Name of Teacher	Designation	Qualification
Aquaculture	Dr. T. K. Ghosh	Reader	M. Sc; Ph. D
	Dr. S. K. Das	Reader	M. Sc; Ph. D
Aquatic Animal Health	Dr. T. J. Abraham	Professor (Fish Microbiology)	M.F.Sc., Ph.D.
	Dr. G. Dash	Reader (Fish Pathology)	M.F.Sc., Ph.D.
Aquatic Environment Management	Dr. R. K. Trivedi	Professor	M.F.Sc., Ph.D.
	Dr. B.K.Das	Professor	M.Sc., Ph.D.
	Dr. S. K. Rout	Associate Professor	M.F.Sc., Ph.D.
Fishery Economics & Statistics	Dr.A.Mondal	Associate Professor	M.F. Sc, Ph.D.
	Dr. S. Sahu	Associate Professor	M.Sc, Ph.D.
Fishery Engineering	Dr.N.A.Talwar	Reader	M.F.Sc.,Ph.D.
Fishery Extension	Dr. S. S. Dana	Professor	M.V. Sc., Ph.D.
Fish Processing Technology	Dr.K.C Dora	Professor	M.F. Sc, Ph.D.
	Dr. S. Sarkar,	Associate Professor	M.F. Sc, Ph.D.
	Dr. S. Chowdhury,	Assistant Professor	M.F. Sc, Ph.D.
Fishery Resources Management	Dr. S. K.Das	Professor	M.F.Sc.,Ph.D.
	Dr.T.S.Nagesh	Associate Professor	M.Sc., Ph.D.
	Dr. S.Behera	Associate Professor	M.F.Sc., Ph.D

## SET UP OF WBUAFS (Contd...)

## Faculty of Dairy Technology

Department	Name of Teacher	Designation	Qualification
Dairy Chemistry	Dr. P.R.Ray	Associate professor & Head	M.Sc., Ph.D.
	Dr. P.K.Ghatak	Professor (Re-employed)	M.Sc., Ph.D.
Dairy Engineering	Dr. P. K. Roy	Assistant Professor	Ph.D.
	Dr.P. Maiti	Professor	Ph.D.
	Dr. S.K. Bag	Associate Professor	Ph.D.
Dairy Microbiology	Dr. T.K.Maity	Professor	M.Sc., Ph.D.
	Dr. S.P.Sarkar	Professor (Re employed)	M.Sc., Ph.D.
Dairy Technology	Dr. D. C. Sen	Professor (Re-employed)	M.Sc., Ph.D.
	Dr. M. K. Sanyal	Professor (Re-employed)	M.Sc., Ph.D.
	Dr. S. C. Pal	Professor (Re-employed)	M.Sc., Ph.D.
	Dr. S. K. Gangopadhyay	Professor (Re-employed)	M.Sc., Ph.D.

## B.8. STAFF POSITION

Sl. No.	Category	Sanctioned Posts	Filled in posts
1	Group C	129	73
2	Group D	367	192

## B.9. RETIRED EMPLOYEES DURING 2014-15

Sl. No.	Name	Category	Date of Retirement
1	Prof. Tapan Kumar Ghosh	Professor	30/04/2014
2	Prof. Malay Kumar Sanyal	Professor	30/06/2014
3	Sri Mahadev Hazra	Staff	30/06/2014
4	Sri Parimal Chandra Das	Staff	30/06/2014
5	Sri Sambunath Shaw	Staff	30/06/2014
6	Sri Dasrath Mondal	Staff	30/06/2014
7	Sri Haradhan Sarkar	Staff	30/06/2014
8	Prof. Goutam Samanta	Professor	31/07/2014
9	Smt. Pudia Hari	Staff	30/09/2014
10	Prof. Dulal Chandra Sen	Professor	31/12/2014





## SET UP OF WBUAFS (Contd...)

### B.10. STATE PUBLIC INFORMATION OFFICER

The mandate of Right to Information Act 2005 is timely response to citizen requests for government information. It is an initiative taken by Department of Personnel and Training, Ministry of Personnel, Public Grievances and Pensions to provide a- RTI Portal Gateway to the citizens for quick search of information on the details of first Appellate Authorities, PIOs etc.

Information can be sought by any citizen of India as per the Act. The University has appointed Dr. S Das, Scientist, DREF, WBUAFS as the State Public Information Officer of the University. Sri A K Chakraborty, Secretary, Faculty Council is the Appellate Authority under this system of providing information. The unit is functional since 2005.

### B.11. SC/ST (BCW) CELL

WBUAFS has established SC/ST (BCW) Cell for monitoring & implementation of the reservation policies for the State of West Bengal vide Notification No. WBUAFS/Admn/S-6(Pt-I)/0787 dated 20/09/2012 from the office of the Registrar, WBUAFS. The cell comprises of the following members :

Sl. No.	Name	Position
1.	Prof. P. Biswas, Vice-Chancellor	Chairman
2.	Sri M.K. Naskar, Finance Officer	Liaison Officer
3.	Prof. A.K. Samanta, Registrar	Member
4.	Secretary, BCW Dept	Member
5.	Secretary, ARD Dept.	Member
6.	Sri Tarun Saha, Councillor	Member
7.	Sri Sujit Barua, Deputy Registrar, Calcutta University	Member
8.	Dr. Pankaj Kumar Biswas, Deputy Registrar	Member
9.	Dr. B.K. Biswas, Scientist	Member
10.	Dr. Samar Halder, Reader	Member
11.	Dr. (Mrs.) Kalyani Ray, Reader	Member
12.	Dr. S. Bag, Reader	Member
13.	Dr. N.A. Talwar, Reader	Member
14.	Sri Kishalaya Mandal, Jr. Store Keeper	Member
15.	Sri Ramesh Baskey, Farash	Member
16.	General Secretary, SU, F/OVAS,FS&DT	Member

### B.12. COMPLAINTS COMMITTEE FOR PREVENTION OF SEXUAL HARASSMENT AT WORKPLACE

Sexual harassment at workplace violates the rights and opportunities of women to seek, obtain and hold employment without discrimination. West Bengal University of Animal & Fishery Sciences is always alert to provide a safe work environment to their women employees and include both preventive and remedial measures to make the work environment safe for women employees.

There exists a committee for this purpose in the University since 2004, which is reconstituted from time-to-time. The latest committee was reconstituted vide Notification No. WBUAFS/Admn/N-2/2316 dt. 03/10/2013 with 12 members including Presiding Officer Smt. Aparajita Biswas, Computer Programmer, DREF, WBUAFS and a third party NGO member.



## FINANCIAL SUMMARY

### C.1. Report of Finance & Accounts Section, WBUAFS, as received from the Finance Officer, WBUAFS for financial year 2014-15:

Hopes and aspirations, achievement and development all around are all the key factors of administration depending upon the fiscal status – the controller of which is the Finance & Accounts Section. The Finance & Accounts Section of our University is also doing the same. This section is mainly mechanized by 17 personnel with two Assistant Finance Officers and Finance Officer as the skipper. Compilation of the entire financial accounts is perpetrated by computerized system. Financial transactions are mainly based on input from State Govt. Funds (both plan & non-plan and capital), Development Grants from ICAR and finance from outside agencies including Govt. of India. The picture regarding inflow and outflow are depicted as below :

Sl. No.	Heads	Receipt in Lakhs	Expenditure (₹ in Lakhs)	Remarks
1	Dev. Grant from ICAR utilized	290.00	Compilation is underway	Expected to be fully.
2	Grants received for Library Strengthening	55.00	55.00	100% utilized.
3	<b>State Govt. Grant</b>			
	(a) Plan	97.65	97.65	98% utilized to budgetary provision
	(b) Non-Plan (Maintenance)	586.26	586.26	98.65% utilized to budgetary provision
	(c) Non-Plan (Salary etc.)	2164.37	2164.37	97% utilized to budgetary provision
4	Grants received from Govt. of India & other funding agencies for undertaking 43 Nos. of Research Projects	466.95	359.02	77% utilized.

Besides above, an amount of ₹486.21 lakhs, have been received from State Govt. and placed with PWD for infrastructural gear up under capital fund

As enshrined in foregoing stages, finance being the fuels and lubricants of the administrative machinery driven by Finance & Accounts Section pledge itself, in spite of many odds and limitations, to make its presence felt to all round venturing for development of this sacred institution for the days to come.





# ACADEMICS



## D.1. ACADEMIC PROGRAMMES (FACULTYWISE)

The West Bengal University of Animal and Fishery Sciences follows the syllabus framed by Veterinary Council of India (VCI) for the Faculty of Veterinary and Animal Sciences. The courses of Faculty of Fishery Sciences follow the syllabus adopted from Indian Council of Agricultural Research (ICAR) and the courses for Faculty of Dairy Technology is approved by AICTE, New Delhi

Courses offered by the University in the three faculties are as follows.

### Faculty of Veterinary and Animal Sciences :

	<i>Name of Course</i>	<i>Duration</i>	<i>Intake Capacity 2014-15</i>
i)	B.V.Sc. & A.H.	5 years Bachelor's degree course	64
ii)	M.V.Sc.	2 years Master's degree course	102
iii)	Ph. D.	3 years Doctoral degree course	48

### Faculty of Fishery Sciences :

	<i>Name of Course</i>	<i>Duration</i>	<i>Intake Capacity 2014-15</i>
i)	B.F.Sc. & A.H.	4 years Bachelor's degree course	34
ii)	M.F.Sc.	2 years Master's degree course	24
iii)	Ph.D.	3 years Doctoral degree course	12

### Faculty of Dairy Technology :

	<i>Name of Course</i>	<i>Duration</i>	<i>Intake Capacity 2014-15</i>
i)	B.Tech. (DT)	4 years Bachelor's degree course	32
ii)	M. Tech. / M.Sc.	2 years Master's degree course	22
iii)	Ph. D.	3 years Doctoral degree course	10

The course curricula undergo modification from time to time following the recommendations of ICAR, VCI and AICTE.

## D.2. ADMISSION

### D.2.1. Admission Schedule

Admission to Undergraduate courses starts generally immediately before or soon after the publication of results of Higher Secondary Examination results conducted by the West Bengal Council of Higher Secondary Education.

In case of postgraduate and Ph.D. courses, admission takes place after qualifying in the Entrance Examinations. 15% seats are filled up by the ICAR nominees.

#### Academic Session

UG Courses

PG Courses

Ph.D Courses

#### Begins During

July

August – September

November - December

## ACADEMICS (Contd...)

### D.2.2. Admission Requirements / Procedure for Undergraduate Studies

Candidates seeking admission to the B.V.Sc. & A.H. course must qualify in the West Bengal Joint Entrance Examination conducted for entrance to the B.V.Sc. & A.H. course. The candidates qualified in the West Bengal Joint Entrance examination conducted for entrance into the Engineering/Technology course are considered for studies in the D. Tech. (D.T.) course. For B. F. Sc. course application forms are generally available from few branches of UCO Banks as notified in the local daily newspapers. After 15 days of last date of receipt of application forms merit list is generally published on the basis of the marks obtained in the 10+2 Examinations.

The Undergraduate candidates must secure minimum 50% marks altogether in Physics, Chemistry, Biology, English and Vernacular in Higher Secondary or equivalent (10+2) examinations. The candidatures of other Board/Council (10+2) level passed from Institutions in West Bengal are considered provided that the candidate is a domicile of West Bengal. The Scheduled caste / scheduled tribe candidates must secure 40% marks instead of 50% marks altogether in Physics, Chemistry, Biology, English and Vernacular in Higher Secondary or equivalent (10+2) examinations.

22% of seats are reserved for SC and 6% for ST students out of the total number of seats. There is also a reservation of (10% + 7%) for the OBC candidates as per the State Govt. Norms. 15% seats are reserved for VCI nominees for the BVSc & AH course and 4 seats are reserved for BFSc and B.Tech (DT) courses each for ICAR nominees. 3% of seats are reserved for physically challenged candidates for each course.

### D.2.3. Admission Requirements for Master's Degree Studies

The candidates for Master's degree courses must have passed B.V.Sc.&A.H. / B.Sc. (D.T.) / B. Tech. (D.T.) / B. F. Sc. from a recognized University with 55% marks in aggregate (50% marks for SC/ST candidates) in traditional system or with a minimum 6.2 OGPA (6.0 for SC/ST candidates) in 10 point scale. Selection of candidates are carried out by University constituted Selection Committees for the purpose and admitted on the basis of merit and performance in the interview. The merit is decided on the basis of percentage of marks obtained in aggregate or OGPA in Bachelor's Degree Examinations as well as OGPA in subject concerned in which admission is sought. The relative weight-age on overall performance in Bachelor's Degree and in the subject concerned for Master's degree studies is given in the ratio of 2:1. Reservation is followed as per State Govt. rules. One seat is reserved for ICAR nominees.

### D.2.4. Admission Requirements for Doctoral (PhD) Studies

The candidates for Doctorate of Philosophy (Ph.D.) must have passed two years Master's Degree in Veterinary and Animal Sciences, Dairy Science/Dairy Technology, Fishery Science securing 55% marks in aggregate or 2.75 OGPA in 4.0 scale or 6.75 in 10 point scale following a first or high second class in B. V. Sc. & A. H. / B. Tech. (D.T.) / B. F. Sc. from any recognized University or National Institute. Candidates seeking admission to PhD course in a subject shall have passed Master's Degree in the same subject and also have done sufficient courses in the proposed major field of specialization within the subject.

In Ph.D. program of a department total no. of seats in an academic year is set on a ratio of 1:1 (Teacher eligible to guide a student : Number of students) and to a maximum of 3 seats in a department. Again, the reservation of seats is as per State Govt. rules.





## ACADEMICS(Contd...)

### D.2.5. Intake of Students

Academic Year 2014-2015														
Courses	General		SC		ST		OBC		ICAR		PWD		GIA	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
B.V.Sc. & AH	25	9	11	3	3	1	1	0	0	0	1	0	0	1
M.V.Sc.	19	7	5	2	1	2	0	0	5	0	0	0	0	0
Ph.D. in Vety. & Animal Sciences	10	7	1	0	1	0	0	0	0	0	0	0	0	0
B.Tech. (DT)	16	2	7	1	0	0	1	0	2	0	1	0	0	0
M.Tech. (DT)	2	2	0	1	0	0	0	0	1	1	0	0	0	0
Ph.D. in Dairy Technology	1	0	0	0	0	0	0	0	0	0	0	0	0	0
B.F.Sc.	13	7	6	1	2	0	4	1	0	0	0	0	1	0
M.F.Sc.	4	14	0	5	0	0	0	0	1	5	0	0	0	0
Ph.D. in Fishery Sciences	5	4	0	2	0	0	0	0	0	0	0	0	0	0

### D.3. OUT-TURN OF STUDENTS

Year - 2013 - 2014				
Discipline	Level	Degree	Numbers of students passed out	
			Male	Female
Veterinary & Animal Sciences	UGB	VSc. & Ah	31	12
	PG	MVSc	22	12
	Ph. D	Ph. D.	8	2
Fishery Sciences	UG	B.F.Sc	14	13
	PG	M.F.Sc	24	12
	Ph. D	Ph. D.	2	0
Dairy Technology / Sciences	UG	B. Tech (DT)	14	5
	PG	M.Tech (DT)	2	2
	Ph. D	Ph. D.	0	0

### D.4. ACADEMIC AWARDS FOR THE STUDENTS

Following recognitions are being awarded to the passed-out students of the three faculties as Gold Medals by the University :

## ACADEMICS (Contd...)

### Faculty of Veterinary & Animal Sciences

- ❖ Smt. Mira Mallik Gold Medal  
(For securing Highest marks in B.V.Sc. & A.H.)
- ❖ Prof. D.B. Mukherjee Gold Medal  
(For securing Highest marks in Vety. Surgery & radiology in B.V.Sc. & A.H.)
- ❖ First Batch (1953) B.V.Sc. Student Gold Medal  
(For securing Highest marks in 5<sup>th</sup> & 6<sup>th</sup> Semester in B.V.Sc. & A.H.)
- ❖ Dr. S.N. Roy Gold Medal  
(For securing Highest marks in Livestock Farm Management in B.V.Sc. & A.H.)
- ❖ Dr. B.N. Dey Memorial Endowment Gold Medal  
(For securing Highest marks in Vety. Gynaecology & Obstetrics in B.V.Sc. & A.H.)
- ❖ Dr. Subir Kr. Sinha Memorial Gold Medal  
(For securing Highest marks in Vety. Medicine, Ethics & Jurisprudence in B.V.Sc. & A.H.)
- ❖ Dr. D.K. Biswas Gold Medal  
(For securing Highest marks in Poultry Production Management in B.V.Sc. & A.H.)
- ❖ Dr. G.L. Sharma Endowment Gold Medal  
(For securing Highest marks in Vety. Public Health in B.V.Sc. & A.H.)
- ❖ Dr. B.N. Mukherjee Gold Medal  
(For securing Highest marks in Vety. Epidemiology & Preventive Medicine in B.V.Sc. & A.H.)
- ❖ Charu Chandra Koley Gold Medal  
(For securing Highest marks in Animal Genetics & Breeding in B.V.Sc. & A.H.)
- ❖ Dinesh Chandra De and Sova De Memorial Gold Medal  
(For securing Highest marks in 5<sup>th</sup> Composite Annual Examination in B.V.Sc. & A.H.)
- ❖ Dr. (Mrs.) Gita Biswas Gold Medal  
(For securing Highest marks in Vety. Parasitology in B.V.Sc. & A.H.)
- ❖ Dr. Animesh Kumar Chakraborty Gold Medal  
(For securing Highest marks in Vety. Pharmacology & Toxicology in B.V.Sc. & A.H.)
- ❖ Prof. G.C. Banerjee Gold Medal  
(For securing Highest marks in Animal Nutrition in B.V.Sc. & A.H.)
- ❖ Dr. P. Bhattacharya Gold Medal  
(For securing Highest OGPA in Animal Production & Management in M.V.Sc.)
- ❖ Prof. Rathindra Nath Ghosh Gold Medal  
(For securing Highest marks in Vety. Pharmacology & Toxicology in M.V.Sc.)
- ❖ 1972 Batch B.V.Sc. & A.H. Students Gold Medal  
(For securing Highest Marks in B.V.Sc & A.H.]
- ❖ Prof. K. L. Bhowmick & Prof A.K. Majumdar Memorial Gold Medal  
(For securing Highest Marks in Veterinary A.H. Extension Education in B. V. Sc. & A. H.)





## ACADEMICS(Contd...)

### Faculty of Dairy Technology

- ❖ Prof. Sukumar De Gold Medal  
(For securing Highest marks in B.Tech. (D.T.))
- ❖ Smt. Titliamayee Ganguli Gold Medal  
(For securing First Position in M.Tech. (D.T.))

### Faculty of Fishery Sciences

- ❖ Smt. Lakshmi Das & Sri Kasi Nath Das Gold Medal  
(For securing Highest marks in B.F.Sc.)
- ❖ Smt. Manju Biswas & Dr. K.P. Biswas Gold Medal  
(For securing Highest marks in Fishery Engineering in B.F.Sc.)

During the academic year of 2013-2014, 22 (twenty two) passed-out students received 22 different Gold Medals offered by the University.

### D.5. HOSTEL

The University extends hostel facilities to the students taking admission to different courses of the University. There are nine hostels, out of which there are six hostels for boys and three hostels are earmarked for girls. The intake capacity of the hostels of the three campuses are as follows :

Intake capacity for	Belgachia Campus	Mohanpur Campus	Chakgaria Campus
Boys	145	504	123
Girls	82	54	64

### D.6. SCHOLARSHIPS

Merit Scholarships are being granted to a few meritorious students for studies in Undergraduate courses as per approval and guidelines issued by the State Government.

### D.7. CONVOCATION

Ninth Convocation of the University took place on 29<sup>th</sup> January, 2015 at University Auditorium, Mohanpur Campus, Nadia. His Excellency, the Governor of West Bengal and Chancellor of the University Hon'ble Sri Keshari Nath Tripathi inaugurated the convocation and presided over the ceremony.

*A total of 22 students were awarded Ph.D degree, while 119 and 161 students received Master's and Bachelor's degree, respectively, in all the three faculties of the University.*

Faculty wise following degrees were awarded to the students for the year 2013 and 2014 –

## ACADEMICS (Contd...)

<i>Degree in the Faculties</i>	<i>No. of Students</i>
<u>Faculty of Veterinary &amp; Animal Sciences</u>	
<b>B.V.Sc. &amp; A.H.</b>	67
<b>M.V.Sc.</b>	75
<b>Ph.D.</b>	20
<u>Faculty of Fishery Sciences</u>	
<b>B.F.Sc.</b>	51
<b>M.F.Sc.</b>	36
<b>Ph. D.</b>	2
<u>Faculty of Dairy Technology</u>	
<b>B.Tech. (D.T)</b>	43
<b>M.Tech. (D.T)/M.Sc.</b>	08
<b>Ph.D.</b>	-

### D.8. EMPLOYMENT OF THE STUDENTS

University Officials as well as the Faculty members are always attached with the passed out students for their counseling for employment and placement in a job. The alumni also take care of the situation for those going in for employment. Students of this University are being absorbed in different developmental sectors in the State, Country and abroad as well.

The main industrial sectors / sectors absorbing the faculty-wise out-turns of the University are as follows :-

#### B.7.1. Faculty of Veterinary & Animal Sciences :

- (i) State Govt. Department of Animal Resource Development,
- (ii) Broiler poultry producing Private Companies,
- (iii) Livestock and poultry biological, medicine producing Private companies,
- (iv) Animal feed producing Private Companies,
- (v) State Govt. Administrative services,
- (vi) Bank and P.O. etc.

#### B.7.2. Faculty of Dairy Technology :

The students passed out from the Faculty get employment in National and Multi-national milk & dairy product producing, Govt., Semi Govt. and Private Companies like,

- |   |                                       |                            |
|---|---------------------------------------|----------------------------|
| (i) Glaxo Smithkline,                         | (viii) Amul,                          | (xiv) ITC (Food Division), |
| (ii) Nestle India Ltd.,                       | (ix) Hindustan Lever,                 | (xv) Almarai, Riyadh,      |
| (iii) Perfetti Van-Melle,                     | (x) Fonterra New Zealand Corporation, | (xvi) IBM,                 |
| (iv) Dynamix Dairy Industries Ltd.,           | (xi) NDDB,                            | (xvii) TCS,                |
| (v) Mother Dairy, Kolkata,                    | (xii) Sudha,                          | (xviii) WCM PF Ltd.,       |
| (vi) Metro Dairy, Kolkata,                    | (xiii) Verka                          | (xix) ITC Infotech,        |
| (vii) National Food Corporation Ltd., Jeddah, |                                       | (xx) Paras Foods, etc.     |





## ACADEMICS(Contd...)

### B.7.3. Faculty of Fishery Sciences

The passed out students of the faculty were placed at different Government, Non-Government organizations, Semi-Government organizations, Private Institutes as well as as follows :

- (i) State Govt. Department of Fishery and other Administrative services,
- (ii) Bank & PO,
- (iii) Central Govt. Research Services,
- (iv) Teaching in different SAUs,
- (v) Animal and fish feed producing Private Companies,
- (vi) KVKs etc.

### D.9. PLACEMENT CELL

The University has established a Placement Cell since February, 2006. This cell works towards the placement of the passed out students of the three Faculties of the University. Majority of the passed out students get employment through different Competitive examinations in the Government, Semi-Government and Private sector organizations.

### D.10. ANTIRAGGING COMMITTEE

There exists an anti-ragging committee in the University to prevent ragging in the University.

### D.11. AWARD OF PG/PH.D. DEGREE TO STUDENTS FOR THE YEAR 2014-15:

#### D.11.1. List of Ph.D. students awarded :-

#### A. Faculty of Veterinary & Animal Sciences

Sl.No.	Name	Department
1	Amit Ranjan	Animal Nutrition
2	Sanju Manda	Veterinary Biochemistry
3	Arpana Priyanka Minj	Veterinary Anatomy & Histology
4	Arnab Das	Veterinary Epidemiology & Preventive Medicine
5	Saktipada Pradhan	Veterinary Pathology
6	Gautam Bordoloi	Veterinary Parasitology
7	Aklilesh Mishra	Veterinary Pharmacology & Toxicology
8	Dijoy Kumar Lal	Livestock Production Management
9	Lalhumliana Tochwawng	Veterinary & Animal Husbandry Extension Education
10	Pinki Kumari	Veterinary Anatomy & Histology

#### B. Faculty of Fishery Sciences

Sl.No.	Name	Department
1	Sarifuddin Ahmed	Fish Processing Technology
2	Utpal Kumar Das	Aquatic Environment Management

## ACADEMICS (Contd...)

### D.11.2. List of PG students awarded :-

#### A Faculty of Veterinary & Animal Sciences

Sl. No.	Name	Department
1	D. Raja	Animal Genetics & Breeding
2	Shubhendu Das	Livestock Production Management
3	Tanmoy Halder	Veterinary Gynaecology & Obstetrics
4	Himanshu Kumar	Veterinary Gynaecology & Obstetrics
5	Thulasi Raman. P	Veterinary Physiology
6	Mausumi Das	Veterinary Medicine, Ethics & Jurisprudence
7	Suprabha Chouhury	Veterinary Medicine, Ethics & Jurisprudence
8	Rajesh Kumar	Livestock Products Technology
9	Smriti Bhagat	Veterinary Epidemiology & Preventive Medicine
10	Smarajit Bhowmick	Veterinary Medicine, Ethics & Jurisprudence
11	Sarmistha Debbarma	Veterinary Medicine, Ethics & Jurisprudence
12	Shilpi Priya Sunita Bara	Veterinary & Animal Husbandry Extension Education
13	Toufique Ahamed	Veterinary Surgery & Radiology
14	Pintu Kumar Khan	Veterinary Surgery & Radiology
15	Cellina Gurung	Veterinary Microbiology
16	Pinky Tigga	Veterinary Microbiology
17	Swarnava Gain	Veterinary Biochemistry
18	Keya Kujur	Veterinary Biochemistry
19	Ratan Bose	Veterinary Biochemistry
20	Monmon Saha	Veterinary Public Health
21	Debashis Murmu	Veterinary Public Health
22	Amiya Bhusan	Majumder Veterinary Gynaecology & Obstetrics
23	Md. Amirul Islam	Veterinary Pharmacology & Toxicology
24	Mithin U.C	Veterinary Pharmacology & Toxicology
25	Ajay Kumar Maurya	Livestock Products Technology
26	Subir Dey	Livestock Products Technology
27	Raj Kumar	Animal Genetics & Breeding
28	Tapan Kumar Manna	Livestock Production Management
29	Soumitra Sinha	Livestock Production Management
30	Tripti Kumari	Livestock Production Management
31	Santanu Chatterjee	Livestock Production Management
32	Swagatam Rudra Paul	Veterinary Anatomy & Histology
33	B.N.M. Khalida Khanum	Veterinary Surgery & Radiology
34	Ankur Debnath	Veterinary Surgery & Radiology





## ACADEMICS(Contd...)

### B Faculty of Fishery Sciences

Sl. No.	Name	Department
1	Santosh Kumar Gupta	Fishery Economics
2	Abhishek Majhi	Fishery Economics
3	Abhishek Das	Fishery Economics
4	Atanu Maity	Fishery Economics
5	Bostanul Arefin	Fishery Economics
6	Suman Kar	Fish Processing Technology
7	Prasanta Murmu	Fish Processing Technology
8	Aniruddha Roy	Fish Processing Technology
9	Kuheli Mondal	Fish Processing Technology
10	Priyanka Chowdhury	Fishery Extension
11	Lopamudra Behera	Aquatic Environment Management
12	Jayati Adhikary	Aquatic Environment Management
13	Sumana Dhali	Aquatic Environment Management
14	Debasmita Jana	Aquatic Environment Management
15	Santanu Nanda Goswami	Aquatic Environment Management
16	Anish Das	Fisheries Resource Management
17	Sudipta Sarkar	Fisheries Resource Management
18	Sarita Kumari Das	Fisheries Resource Management
19	Tusar Subhra Jana	Aquaculture
20	Banasree Biswas	Aquaculture
21	Partha Sarathi Roy	Aquatic Environment Management

### C Faculty of Dairy Technology

Sl. No.	Name	Department
1	Priti Saha	Dairy Chemistry
2	Iskwar Chandra Barnwal	Dairy Technology
3	Projesh Pritham Lanti	Dairy Chemistry
4	Tumpa Sarkar	Dairy Chemistry

### D.12. Achievements/ recognitions of the students:

The students of WBUAFS took part in several co-curricular activities like sports, quiz, NSS camps, Youth Festivals etc. throughout the year.

The department of Veterinary Physiology organized Physiology Quiz amongst the students of the under graduate level at the University level, which was followed by Eastern zonal level contest and the students of this faculty ranked 1<sup>st</sup> in the zone. This programme took place during September, 2014. Students also participated at national level competition on Physiology Quiz at CIRB, Hisar on November, 2014 and became runners up.

## ACADEMICS (Contd...)

Sl.No.	Achievement	Dept/ Faculty
1.	Inspire Fellowship (DST) received by Dr. Gargi Mahapatra, Ph.D. Scholar during the period 2013-14 under Professor Subhasish Biswas as Supervisor.	LPT, VAS
2.	Dipanwita Bhattacharya Ranked First in Animal Science for AIEEA-PG Examination, 2014.	VAS
3.	Ratanti Sarkhel ranked Third in Animal Biotechnology for AIEEA-PG Examination, 2014.	VAS
4.	Swaraj Biswas ranked First among the SC Candidates in Animal Biotechnology for AIEEA-PG Examination, 2014.	VAS
5.	Sourav Mahanty is awarded with DST INSPIRE Fellowship for Doctoral Programme in the year 2014 Biochemistry,	VAS
6.	Bidhan Sarkar, Ph.D. student qualified NET, 02.03.2015	Gynae. & OBS, VAS
7.	Achintya Mahanti, Ph.D. Scholar qualified ICAR-NET in Veterinary Microbiology and UGC-NET in Social Medicine and Community Health.	Veterinary Microbiology, VAS
8.	Mausam Das, Ph.D. scholar qualified ICAR-NET in Veterinary Microbiology and Rajib Gandhi National Fellowship for SC/ST candidate (for pursuing Ph.D.)	Veterinary Microbiology, VAS
9.	Cellina Gurung, M.V.Sc. student, received "1st prize in Agriculture and Veterinary Science" section for paper presentation (Oral) in 22 <sup>nd</sup> WB State Science and Technology Congress, University of North Bengal, Siliguri, 28 Feb.-1 March, 2015	Veterinary Microbiology, VAS
10.	Dr. Gautam Bordoloi joined as Assistant Professor in the Department of Veterinary Parasitology in Lakhimpur Veterinary College, AAU, Guwahati, Assam	Veterinary Parasitology, VAS
11.	Dr. Mrinal Das joined as Assistant Professor on Deputation in the Department of Veterinary Parasitology, Tripura, Agartala	Veterinary Parasitology, VSA
12.	Dr. L. Ralte, Dr. Mrinal Das and Dr. Anurag Jena Qualified National Eligibility Test Conducted by ICAR in September, 2014	Veterinary Parasitology, VSA
13.	Dr. Anurag Jena qualified National Eligibility Test Conducted by UGC in May, 2014	Veterinary Parasitology, VSA
14.	Dr. Anupam Brahma Qualified National Eligibility Test Conducted by ICAR in June, 2014	Veterinary Parasitology, VSA
15.	Dr. Arnab Maji, a student of Dr. Asit Kumar Maji qualified ICAR NET and selected as Asstt. Professor in OUAT.	Vet. Surg. & Radiology, VAS
16.	Mr. Amitava Ghosh, Ph.D. Scholar, selected for the INSPIRE Fellowship of Department of Science & Technology (DST), Ministry of DST, Govt. of India for pursuing Doctoral programme.,	Fishery Extension FS





## ACADEMICS(Contd..)

### Some other Activities during 2014 15:

No.	Date	Place	Participants	Purpose
1	03/01/15 - 09/01/15	Ranchi University, Ranchi, Jharkhand	17 Nos of students along with 1 teacher	All India University Youth Festival
2	18/03/15 - 22/03/15	National Dairy Research Institute, Karnal, Haryana	25 Nos. of students along with 2 teachers	XV <sup>th</sup> All India Agricultural Festival (Agriunifest)
3	30/03/15	Mohanpur, Nadia	27 Nos. of Students along with 10 Teachers	Blood Donation Camp. 41 Units of Blood collected
4	A total of 12 students qualified with good ranks in AIEEA-PG Examination, 2014.			
5	A total of 8 students qualified ICAR NET Examination, 2014.			
6	A total of 5 students got selected for DST-INSPIRE Fellowship for pursuing Ph.D. in 2014.			
7	<ul style="list-style-type: none"> <li>• 13 students obtained Junior Research Fellowship (JRF) of ICAR during 2014.</li> <li>• 10 students are passed ARS main examination.</li> <li>• 5 students passed National Eligibility Test (NET) of ICAR during 2014.</li> </ul>			
	04 students obtained INSPIRE fellowship of DST, Government of India for doing Ph.D.			

## **E** RESEARCH

The Directorate of Research, Extension & Farms under West Bengal University of Animal & Fishery Sciences is the main controlling unit to look after the research activities in the fields of Veterinary & Animal Husbandry, Dairy Technology and Fishery Sciences. Various research projects are being undertaken by the faculty members of academic departments, scientists and research workers under the supervision of the Directorate of Research, Extension & Farms. The knowledge gained and techniques developed from the projects are disseminated to the livestock owners and fish farmers of the state. The University has set up its research strategies by identifying priority research areas emphasizing eco-friendly, farmer friendly and small farming unit based technologies.

Various need based research programmes are being undertaken by the teachers and scientists of the University to develop new technologies for the farmers and entrepreneurs of the state. For this purpose the University has established research and extension centres in various agro-climatic zones of the state.

At present the University is conducting 43 various research projects/schemes with a fund allocation of Rs. 3732.52 lakhs sponsored by different funding agencies like ICAR, State Govt. departments, DBT, DST and other institutes.

Two RKVY Programmes are running under this University one for livelihood development of the tribal people of Jhargram Block of West Midnapore and the other for Extension of Animal Health Care Services in Remote Areas of West Bengal. Two other important Niche Area of Excellence programmes funded by ICAR on "Surveillance of diseases of aquaculture finfish and shellfish in West Bengal and development of disease management strategies" and "Animal Disease Registry and Tissue Bank" are continuing.

### **E.1. TYPE OF ON-GOING PROJECTS AND FUNDING AGENCIES**

<i>Sl.No.</i>	<i>Type of Project</i>	<i>Funding Agency</i>	<i>Numbers</i>
1	All India Coordinated Research Project (AICRP)	ICAR	2
2	Niche Area of Excellence	ICAR	2
3	All India Network Project (AINP)	ICAR	4
4	RKVY	Govt. of WB	2
5	Outreach programme	ICAR	2
6	Ministry of Agriculture, Govt. of India (AH & DF, NFDB etc.)	GOI	3
7	Ministry of Environment & Fisheries (NCSCM)	GOI	1
8	Department of Biotechnology (DBT)	Govt. of India	8
9	Department of Science and Technology (DST)	Govt. of India	2
10	National Initiative on Climate Resilient Agriculture (NICRA)	ICAR	1
11	Project Directorate on Poultry, Hyderabad	ICAR	1
12	TSP	ICAR	1
13	ICAR project	ICAR	3
14	NAARM	ICAR	1
15	Foreign Funded	Germany	3
16	Industry (Indian and foreign – Spain, UK)	Private	7
	<b>Total</b>		<b>43</b>





## RESEARCH (Contd...)

### E.2. FACULTY-WISE DISTRIBUTION OF RESEARCH PROJECTS

Sl.No.	Faculty	No. of projects	Fund allocation
1	Veterinary and Animal Sciences	30	2756.22 lakhs
2	Fishery Sciences	8	934.78 lakhs
3	DREF	5	41.52 lakhs
	<b>Total</b>	<b>43</b>	<b>3732.52 lakhs</b>

### E.3. BRIEF LISTING OF ON-GOING PROJECTS

#### E.3.1. FACULTY OF VETERINARY AND ANIMAL SCIENCES

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	AICRP on Goat Improvement Black Bengal Field Unit- Kolkata	ICAR,	Prof. P.K. Senapati	151.33	2000
2	A.B. Vista feed ingredient project	Industry - A.B. Vista	Dr. G.P. Mandal	US \$ 5000	2009
3	Enteric methane emissions from livestock and mitigation strategies (Lalbahadur Shastri Young Scientist Award)	ICAR	Dr.A.K.Patra	11.71	2013
4	Effect of "GALLIPRO" Supplemented Feed on Growth performance of Broiler Chicken – A challenge study.	Industry - EVONIK (SEA) Pte. Ltd.	Prof. B. Roy	8.26	2014
5	Role of phytobiotics as alternative to antibiotic growth promoters on performance of weanling pig and poultry	DBT, Gov. of India	Dr. G.P. Manda	119.07	2014
6	Study on exploring the antibacterial and nutrient sequestrating effects of Amaril in broiler chicken	Industry - Dex Iberica, Spain	Dr. G.P. Manda	14.10	2014
7	Effect of enzyme A on the performance and economic benefit of commercial broiler chickens	Industry - Danisco UK Ltd, UK	Dr. G.P. Mandal	3.00	2015
8	RKVY Project on Livelihood Improvement of Poor and Tribal People through Livestock Based Enterprises under Selected Villages of Jhargram Block	RKVY ARD Dept., Govt. of West Bengal	Dr. M.C Pakhira	950.00	2014
9	Molecular characterization and study of disease resistance genes of indigenous sheep in West Bengal	DBT, GOI	Dr. A. Pal	48.00	2014

## RESEARCH (Contd...)

6	Development of Seed Bank and Propagation of Cage Culture of Asian Seabass and Mullet in Coastal West Bengal (AINP on Mariculture)	ICAR	Dr. B.K. Das	43.00	2014
7	Culture and propagation of indigenous air-breathing Catfishes in a home-stead stagnant pond	NFDB	Sri Amitabha Ghosh	0.38	2014
8	AICRP on PHT	ICAR	Dr. Sreekanta Sarkar	215.00	2004

## E.3.3. DIRECTORATE OF RESEARCH, EXTENSION &amp; FARMS

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	National Information System on Agriculture Education network in India (NISAGENET)	ICAR	Dr. (Mrs.) S. Das, Scientist	3.08	2005
2	Pilot Project on Climate-Resilient Adaptation through physical protection and enhanced food production for Indian Sundarbans	International Pilot Project Dept. for International Cooperation (GIZ), Govt. of Germany	Dr. B.K. Chand	25.14	2012
3	Pre-feasibility Study for an Envisaged Sustainable Aquaculture Programme under Indo German Financial Cooperation (International Consultancy Project)	German Development Bank (kfw)	Dr. B. K. Chand, Farm Manager	10.00	2014
4	Environmental and Social Impact Assessment for Traditional Shrimp Farming Clusters in North 24 Parganas District of West Bengal (International Consultancy Project)	Organic Services, Germany	Dr. B. K. Chand, Farm Manager	3.3	2015
5	Implementing Agricultural Science & Technology Indicators (ASTI) Data Collection and Policy Analysis in India	Implementing Agency- NAARM (IIFPRI) No Fund involved	Dr. (Mrs.) S. Das, Scientist	—	2014

## E.4. SALIENT ACHIEVEMENTS OF ON-GOING PROJECTS

## E.4.1. Highlights of the Projects Conducted in the Faculty of Veterinary and Animal Sciences

1. RKVY on Livelihood Improvement of Poor and Tribal People through Livestock Based Enterprises under Selected Villages of Jhargram Block





## RESEARCH (Contd...)

The Animal Resources Development Department, Govt. of West Bengal, and the State Level Sanctioning Committee (SLSC) has approved the prestigious RKVY project to WBUAFS initially for 5 years. Primary target of the project is to reach 1000 farmers of 50 villages under Lodhasuli, Agubani and Patasimul G.P.3 GPs, of Jhargram block under West Midnapur district during a period of 5 years, to improve the livelihood of small, marginal, landless and tribal women farmers through productivity enhancement of livestock. Critical gaps existing in the livestock production system in those villages were first identified through survey work.

For the year 2014-15, out of 2000 surveyed family, two hundred (200) nos household of said G.P(s) were selected through Baseline Survey work for integrated Livestock based enterprise model (viz Goat+Pig; Goat+Poultry; Poultry+Pig). Various livestock interventions were undertaken to bridge the gaps between income and expenditure. Financial gain through enhancement of household income will be calculated. A brief summary is as follows:

### Critical Gaps, Interventions to Bridge this Gap and Impact:

Critical Gaps	Interventions	Impact
Lack of pure and improved breeds of livestock	Introduction of pure breed livestock: a. Black Bengal Goat – 620 nos b. Khoonghroo Pig – 207 nos c. Vonraja Poultry- 3000 nos	1. Livestock & poultry based enterprise model developed. 2. Livestock Productivity enhanced over existing level. 3. Mortality rate reduced, Growth accelerated.
Lack of knowledge in Livestock Management	Farmers were trained in disease and nutrition management of Livestock & Poultry	4. <b>323 nos</b> of Women Farmer's Trained or motivated out of these <b>200 nos</b> of farmers directly related to the project.
Lack of balanced Livestock feed Lack of Vet Care	Supply of balanced feed and mineral supplement Regular Veterinary Health Care, deworming and immunization programme is being carried out under this project	5. Farmers are getting assured vet care services from trained personnel at door steps.

### 2. AICRP on 'Goat improvement, Black Bengal (Field unit)'

Black Bengal Field Unit was established in 2001 under West Bengal University of Animal & Fishery Sciences, Kolkata with the main objective to conserve and genetic improvement of Black Bengal Goat in the farmer's flock. As per the technical programme, the baseline information on production, reproduction, growth traits, population trend, managemental practices, feeding pattern, disease prevalence and socio-economics in goat production system were recorded and analyzed. The registration of animals at farmer's flock with proper identification was carried out in village units.

- ❖ During 2014-2015 Murshidabad cluster has been extended by adopting a new village Beliapukur with 86 does in M-J Block of Murshidabad district in collaboration with KVK. Digha, West Bengal University of Animal & Fishery Sciences.









## Activities under RKVY Project on 'Livelihood Improvement of Poor and Tribal People through Livestock Based Enterprises under Selected Villages of Jhargram Block'

1. Hon'ble Vice-Chancellor's visit to project area
2. Hon'ble Vice-Chancellor and Director, ARD interacting with farmers
3. Local MLA and Hon'ble Vice-Chancellor interacting with the beneficiaries
4. Distribution of goats among the beneficiaries
5. Vaccination against PPR by Field Level Mobilizer
6. A project beneficiary with her 'Vanaraja' flock
7. Training of beneficiaries at Patashimul GP, Jhargram Block
8. Kitchen Garden of a beneficiary at Aguibani GP, Jhargram Block



## RESEARCH (Contd...)

### Project activities of AICRP on goat



Farmers training at Murshidabad cluster



Health cum deworming camp at Jhargram cluster



Monitoring of project activities by PI at Sundarban



Typical Goat House

- ❖ Further, a new cluster with mostly tribal farmers at Lodhasuli (Dhangri, Ranidihi, Manapara and Malapada village) with 217 does in Jhargram Block of West Midnapur District has been adopted in March 2015. Thus the unit is now working in four clusters i.e. Nadia cluster (Ayeshpur and Ganguria), Sundarban cluster (Jatirampur and Rangabelia), Murshidabad cluster (Bamunia and Beliapukur), and Lodhasuli cluster at Jhargram.
- ❖ During 2014-15, the performance of 638 registered doe (172, 160, 216, 60 and 30 does in Ayeshpur, Ganguria, Jatirampur-Rangabelia, Bamunia village units respectively) are being recorded from which 1285 kids were born from 691 kidding (Table-1 & 3); 53 doe have been kidded twice in this year.
- ❖ 22 Bucks were purchased based on their 6 months body weight and prolificacy status of their dams. Out of these 15 new bucks were distributed in the village units in addition to previous males or replacement for selective breeding. Rest of the bucks are maintaining at buck raising centre under the project.





## RESEARCH (Contd...)

- ❖ With the opening flock of 1761 in 2014-15, after breeding with selective males the closing balance has reached to 225%.
- ❖ As per the initial doe the annual growth rate of Black Bengal for this year is 174.61% and the population growth is 57.93%.
- ❖ The average flock strength in the farmers flock has increased to 5.94 in 2014-15 from 4.50 in 2013-2014; the initial flock strength was 2.53 in 2002-2003.
- ❖ 46.32 % farmers have a flock of 1 to 4 goats followed by 5 to 8 (34.88 %), 9 to 12 (14.44 %) and then by above 12 (4.36 %). It is an indicator of rearing Black Bengal goat by the farmers with small flock size; 80% farmers have a flock maximum of 8.
- ❖ In this year improvement in body growth has also been observed than previous year and the average body weight at birth, 3 month, 6 month, 9 month and 12 month was  $1.203 \pm 0.005$  kg,  $4.998 \pm 0.035$  kg,  $7.378 \pm 0.048$  kg,  $9.845 \pm 0.065$  kg and  $12.419 \pm 0.101$  kg respectively in 2014-15.
- ❖ The mean body length, height at wither, heart girth, punch girth and head length were  $20.29 \pm 0.05$  cm,  $21.46 \pm 0.06$  cm,  $23.54 \pm 0.06$  cm,  $23.03 \pm 0.08$  cm and  $7.39 \pm 0.02$  cm at birth;  $33.38 \pm 0.08$  cm,  $34.48 \pm 0.08$  cm,  $38.46 \pm 0.11$  cm,  $40.99 \pm 0.13$  cm and  $10.51 \pm 0.03$  cm at 3 months;  $36.79 \pm 0.09$  cm,  $38.06 \pm 0.08$  cm,  $44.71 \pm 0.65$  cm,  $47.29 \pm 0.16$  cm and  $11.83 \pm 0.04$  cm at 6 months;  $40.07 \pm 0.13$  cm,  $41.62 \pm 0.13$  cm,  $48.50 \pm 0.16$  cm,  $52.72 \pm 0.22$  cm and  $12.74 \pm 0.05$  cm at 9 months;  $43.84 \pm 0.22$  cm,  $45.72 \pm 0.20$  cm,  $53.53 \pm 0.28$  cm,  $58.36 \pm 0.29$  cm and  $14.24 \pm 0.07$  cm at 12 months of age. Male kids are bigger than female kids at all ages.
- ❖ Improvement in reproductive performances has also been noticed from previous year. During 2014-15 the average age at first service and 1<sup>st</sup> kidding were recorded as  $237.54 \pm 5.07$  days and  $383.23 \pm 5.31$  days respectively; the respective figure were  $304.47 \pm 23.77$  days and  $439.17 \pm 24.67$  days in 2013-14.
- ❖ The average overall service period, gestation period and kidding interval was  $91.94 \pm 3.06$  days,  $147.39 \pm 0.26$  days and  $237.79 \pm 3.04$  days in all village units during 2014-15.
- ❖ Maximum number of kidding have been occurred from August to February although there have been kidding in every month.
- ❖ The kidding rate (litter size) has reached to 1.86 %. Twin born kidding is 52.82 % followed by singlet kidding (31.69 %), triplet kidding (13.31 %) and quadruplet kidding (2.17 %) and in 2014-15.
- ❖ With the intervention of health care and prevention the kid mortality (upto 12 month) has been restricted to 6.01% in 2014-15 and the mortality in the total flock was 6.19 %.
- ❖ In marginal (upto 20 katha land), small (20 - 40 katha land) and medium (above 40 katha land) farmers annual income was around Rs.  $4603.77 \pm 267.62$ , Rs.  $4636.74 \pm 468.24$ , Rs.  $5961.84 \pm 698.00$  respectively.
- ❖ In illiterate, partially literate (Class-I to IV) and moderately literate (Class V to XII) annual income was around Rs.  $4687.16 \pm 329.38$ , Rs.  $4873.96 \pm 395.35$ , Rs.  $4881.58 \pm 420.21$
- ❖ Animals sold by the farmers are 23.14 % in 2014-15.
- ❖ The average annual income from a doe has substantially increased to Rs. 2790.00 in 2014-15.
- ❖ The average annual income of a farmer has been recorded as Rs.  $4820.12 \pm 225.27$  in 2014-15.

The AICRP on Goat Improvement was successful enough to create awareness among the goat farmers about identification and record keeping, disadvantages of early breeding of young does; regular vaccination and deworming; importance of giving supplementary feeding to does, bucks and kids; optimum age and weight of kids for sale with expected market rate; first aid treatment etc through organization of several treatments and vaccination camps along with other extension activities like meeting, interactive sessions, training etc.

## RESEARCH (Contd...)

### 3 Niche Area Excellence programme on Animal Disease Registry and Tissue Bank - A brief report of the achievements during 2014-15, etc.

- Among the canine vector borne diseases, *Babesia gibsoni* was recorded the highest incidence (42%) in based upon the molecular analysis (PCR). Other CVBDs the incidence of *Ehrlichia. canis*, *Haemobartonellacanis* and *Hepatozoon canis* was 23%, 11% and 9%, respectively.
- With PCR as the reference diagnostic tool the sensitivity, specificity and accuracy of microscopy in diagnosis of CVBDs were: 84.12%, 81.44% and 81.33% for *B. gibsoni*, 19.44%, 94.73% and 76.67% for *E. canis*, 35.7%, 100% and 94% for *H. canis* and 100%, 82.1% and 84% for *Hbt. canis*, respectively.
- With the commercial kit based on Immuno-chromatography for *E. canis* the sensitivity, specificity and accuracy of microscopic diagnosis were 16.7%, 96.6% and 82.9%, respectively.
- Adult dogs revealed higher rate of incidence (32.7%) compared to those of the younger age groups and the dogs with better body score indices had the infections their asymptomatic carrier status.
- Among the eight dog breeds the GSD (33%) followed by Labrador (32%) and cross-bred dogs (19%) had moderate to high incidence rate of *B. gibsoni* and a similar trend was also observed in the other CVBDs.
- The incidence of all the CVBDs was higher in the female compared to the male.
- Mixed infection with two or more vector-borne protozoan / rickettsial pathogens was predominant (see the Figure)
- The emerging CVBDs e.g. *Anaplasma platys*, *Ehrlichia ewingii*, *Theileria annae* were not recorded using the molecular method of detection.
- Hemato-biochemical impact of the CVBD revealed that:
  - Negative impact on haemoglobin content
  - Increase in the counts of Neutrophil, Eosinophil and Basophil
  - Elevated levels of BUN, total protein and globulin
- Only three animals each out of 79 indigenous and 72 cross-bred cattle of Midnapore, Nadia, Hoogly and South 24-Parganas districts of West Bengal were seopositive for paratuberculosis as tested by the commercially available kit.

### 4. All India Network Programme on Gastro-intestinal parasitism Salient achievements during 2014-2015

- The overall prevalence of gastrointestinal parasites irrespective of the four ruminant livestock species in the three agro-climatic zones was 61.90%. The highest was in Hill zone (64.35%) followed by Tarai zone (64.16%) and the lowest in the Old Alluvial zone (60.94%).
- The highest seasonal prevalence was in the monsoon season (69.41%) followed by winter (55.36%) and the lowest (53.25%) in summer. Intensity of GIN infection faecal egg count (EPG) revealed the similar seasonal pattern.
- Evaluation of three commonly used anthelmintics in small ruminant livestock of five organised farms revealed that Albendazole had lower than the desired efficacy (81.54% to 95.00 %) indicating the emergence of resistance, while Ivermectin (96.67% to 98.46%) and Levamisole (95.00% to 96.92%) yielded the desired efficacy.
- The per capita net economic losses due to G.I. nematodosis in terms of reduced bodyweight/meat production alone in small ruminants were Rs. 220.00 to 260.00 in sheep, whereas it was Rs. 318.00 in case of goat.



## RESEARCH (Contd...)

- Attempt has been made in exploring the polymorphism in IL-13 and IFN- $\gamma$  genes as the genetic marker in *Haemonchus* resistant (based on phenotypic marker-EPG) Garole sheep and role of the level of expression of these two genes in attributing such resistance. The results are in the process analysis and interpretation.

### 5. All India Network Programme on 'Bluetongue disease'

It is one of the oldest project running in WBUAFS since 2001. Some of the achievements of the project during 2014-15 are depicted below :

- Scromonitoring for prevalence of bluetongue (BT) in sheep, goat and cattle was assessed for the first time in Meghalaya state. Considerable sero-positivity was detected in sheep (26.9 %), goat (56.5 %) and cattle (42.4 %) indicating the prevalence of bluetongue in ruminants of the state.
- Studies on prevalence of bluetongue in ruminants of Jharkhand were carried out for the first time. High seropositivity was detected in sheep (43.68%), goat (43.33%) and cattle (57.50%) for anti-BT antibodies in different agro-climatic zones of Jharkhand. Predominant vector for BT was detected as *Culicoides oxystoma*.
- Anti-BT antibodies (38%) detected in free-range mithun (*Bos frontalis*) for the first time.
- Scrorevalence of BT in ruminants (sheep-26.66%, goat-31.25%, cattle-52.27%) of Orissa reported for the first time.
- One bluetongue virus (BTV) isolate (WB/G/13) was generated from suspected goat of Midnapur district of West Bengal.
- Molecular characterization encompassing RT-PCR, Cloning and Sequencing of the new BTV isolate revealed that the isolate was of BTV-16.
- Molecular identification & phylogenetic characterization of BT vector, *Culicoides oxystoma*, was carried out for the first time from eastern India.



Monolayer of BHK<sub>21</sub> cell line (Control)



After Bluetongue Virus inoculation in BHK<sub>21</sub> cell line

### 6. Molecular characterization and study of disease resistance genes of indigenous sheep in West Bengal

Birbhum sheep has been characterized and observed to be genetically distinct from other sheep breeds of West Bengal. It has been documented as a newly identified sheep breed in the dry arid region of Birbhum district of West Bengal for the first time by Dr A Pal

Immune response gene as CD14 was reported for the first time in World in Garole, Bonpala, Chotanagpuri and Birbhum sheep breeds.

## RESEARCH (Contd...)

## 7. Centrally sponsored scheme on Conservation of Threatened Breed (Ghoongroo Pig)

Ghoongroo Pig, an indigenous (landrace) breed of pig belongs to Dooars' valley of West Bengal. The breed was unknown to scientists, planners and developers before launching of the scheme. Scientists of West Bengal University of Animal and Fishery Sciences first identified and reported about the breed. High prolificacy, faster growth, consumers' preference and adaptability to low management input are some of the outstanding characteristics of the breed. The unique germ plasm was under constant threat due to indiscriminate breeding with scrap variety. Most significantly, the breed has the potential to replace the exotic breed from temperate zone used for improved pig production programme.

**Targets / Action points:** Breed Conservation

**Targets Achieved:** Conservation and propagation of the breed

**Technology transferred:** Ghoongroo Pig Production Technology

**Major achievement:** The Breed has been registered as first Indigenous breed of India

Most interestingly the breed has adapted very well to South Bengal climate. It has become very popular among the pig farmers of South Bengal because of its high growth rate at the farmers' house, low health problem, excellent prolificacy, low mortality at pre-weaning stage, high quality pork and consequently high consumer demand. A male or female animal at the age of marketing (10 months) fetches a huge profit margin. This has made the breed popular in South Bengal. There is always a very high demand for weaned piglets.

## 8. Epidemiology of Extended-Spectrum Beta Lactamases (ESBL) in Enterobacteriaceae group of bacteria isolated from swine in NER (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim &amp; Tripura) and swine &amp; poultry in West Bengal

**Important observations during 2014-15 are as follows :**

- i) *Escherichia coli*, *Salmonella*, *Klebsiella* were isolated from healthy backyard birds, broilers, krouilers, besides indigenous (non-descript) and farmed pigs.
- ii) In backyard poultry (RIR breed) virulence genes for avian pathogenic *E. coli* (n=272) (*papC*, *tsh*, *iucC*) was not detected except the *astA*. The study revealed that the commensal *E. coli* present in backyard birds are devoid of virulence genes to establish infection. Further, these commensal *E. coli* also did not possess any virulence genes for shiga toxin producing *E. coli* and uropathogenic *E. coli* that are major human pathogen. So the backyard birds may be considered as a safe food in terms of zoonotic microbial infection. Whereas, among the *E. coli* isolates of broilers examined by m-PCR, 5.1% were found to possess the virulence genes for shiga toxin producing *E. coli* and enteropathogenic *E. coli*.
- iii) Regarding the carriage of major extended spectrum beta lactamase (ESBL) genes, the studied backyard birds were detected to be free whereas, broilers (29.4%) possessed them. This finding also revealed that the backyard birds are safe in terms of antimicrobial resistance gene transfer.
- iv) ESBL-*E. coli* was detected with higher frequency in indigenous pigs than the farmed pigs, although no history of antibiotic use in indigenous pigs was noted.
- v) During *in vivo* challenge study of ESBL-*E. coli* in different breeds of poultry such as RIR, broiler and Haringhata Black (native breed), high immune responses were observed in HB and RIR birds than the broilers that could be one of the driving factor of disease resistance.

The *in vivo* challenge of ESBL-*E. coli* in different breeds of poultry also revealed that, ceftriaxone-tazobactam combination (8:1) @ 25 mg kg<sup>-1</sup> bw<sup>-1</sup> at 12 h interval for 3 consecutive days can be used as effective treatment strategy.





## RESEARCH (Contd...)

### 9. ICAR sponsored 'Poultry seed project'

The Indian Council of Agricultural Research (under Project Directorate on Poultry, Hyderabad; Central Avian Research Institute, Bareilly) and several State Agricultural and Veterinary Universities developed improved chicken varieties (*Vanaraja*, *Giriraja*, *Gramapriya*, *CARI Shyam*, *Rajarshi*, *Swarnadhara*, *Nandanam*, *Krishna-J*, *Gramalakshmi*, *CARI Gold* etc.), suitable for rural poultry farming. Majority of these varieties resemble the native chicken. It grows fast and produce more number of eggs and require low input (like feed, housing, management, health care, etc.). It also sustains different hazards of the climatic and environmental changes. The Project Directorate on Poultry has developed three promising chicken varieties which can sustain and perform better than the native (*deshi*) chicken varieties available in the country. The improved rural chicken varieties developed by PDP are *Gramapriya*, *Vanaraja* and *Krishibro* which are popular for their egg production, dual purpose and meat yield respectively. All these birds gained wider acceptability across the country with the limited extension and commercial propagation facilities available with the Directorate.

A need was felt to establish rural chicken germplasm units across the country to meet the growing demand for these chicken varieties and also to avoid difficulties involved in transportation of these delicate and perishable eggs and chicks throughout the country.

The achievements of the project during reporting period is as follows –

**Targets / Action points:** Production and propagation of *Vanaraja* and *Gramapriya* chicks

**Targets Achieved:** More than three lakh chicks have been produced and propagated

**Technology transferred:** Rearing of *Vanaraja* and *Gramapriya* birds in backyard

**Major achievement:** Popularization of *Vanaraja* & *Gramapriya* birds as a source of supplementary income.

### 10. Outreach Programme on 'Livestock related environmental pollutants, contaminants and toxicants (Monitoring of drug residues and environmental pollutant)'

Monitoring of drug residues and pesticide residue in edible tissues of livestock and evaluation of their safety is the major areas of work under the project. The project is with the objective to determine marker residues and to prepare data based monograph of pesticides and drugs in animal products with special reference to metabolism study of pesticides in farm animals.

Samples were collected from open markets of North 24 Pargana, South 24 Pargana and Kolkata. A total of 107 chicken, 86 chevon, 95 milk and 88 egg samples were analyzed for antibacterial and pesticides concentration. Endosulfan and Chlorpyrifos were detected in egg and milk samples which were below MRL value.

### 11. Outreach Programme on Zoonotic Diseases (Dermatophytosis and Cryptococcosis in Animals and their Public Health Importance).

The collaborating centre in West Bengal is working on "*Dermatophytosis and Cryptococcosis in animals and their public health importance*". After examining different species of animals and human, this center has isolated 7 species of dermatophytes- *Microsporum canis*, *M. gypseum*, *M. nanum*, *Trichophyton verrucosum*, *T. mentagrophytes*, *T. rubrum*, *T. equinum*. Different epidemiological data have been collected and analysed for all clinically suspected animals and human. A retrospective study was done to reveal the zoonotic potency of the isolated dermatophytes. *Cryptococcus neoformans* and *Cryptococcus gatti* is isolated from different environmental samples specially pigeon droppings and excreta from other domestic and pet birds, and cloacal swabs. *Cryptococcus* sp. was isolated from HIV positive human patients and a retrospective study is ongoing. The center is presently working on Antifungal Sensitivity Testing of the isolated organisms and Molecular Identification techniques for rapid identification of the diseases.

## RESEARCH (Contd...)

### 12. Centrally sponsored scheme on In-situ Conservation of Threatened Breed (Haringhata Black Chicken)

Haringhata Black, an indigenous fowl genetic resource came to the notice of scientists, planners and developers 25 years back by virtue of its superb adaptability to back yard system, productivity and disease tolerance. The breed has been listed by Acharya and Bhat (1984), NBAGR (2004) and World Watch List (FAO, 2009). However, the indigenous breed, like others lost track due to market competition with commercial layer and broiler of synthetic strain (Singh and Singh, 2004). The breed is constantly losing genetic identity (purity) due to unregulated breeding with other breeds in the back yard. Farmers' ignorance coupled with lack of attention of other stakeholders. This has eventually led to a threat to the breed. Due to genetic dilution the breed has developed several defects, viz., loss of body conformation (originally ideal layer type), reduction in body size and loss of egg production.

**Targets / Action points:** In-situ Conservation of Haringhata Black Chicken

**Targets Achieved:** In-situ conservation programme has been launched on 15.01.2015 at Village-Sonakhali, Haringhata, Dist-Nadia involving all the households of the village

**Technology transferred:** Rearing of Haringhata Black chicken in backyard

**Major achievement:** First time in India the action plan/ protocol for in-situ conservation of chicken breed has been successfully implemented.



Animal Examination by the students at the Clinics, Mohanpur



Clinical Examination of a goat at the Outdoor Clinics, Mohanpur



Students attending Health Camp organised by the Department of TVCC



Minor Surgery in the OT of Veterinary Faculty at Mohanpur



## RESEARCH (Contd...)



Cyprinid herpes virus-2 infected gold fish with shunken eye



Farmer's Training under NICRA Project



Hon'ble Vice-Chancellor in discussion with the trainees group at Faculty of Fishery Sciences



Field survey at mangrove patches, Sundarban



Myxozoans infestation in the gill of C.catla



Magnified Myxobolus sp with clear polar capsules

## RESEARCH (Contd...)



X Ray of a Dog in the Dept. of TVCC, Mohanpur



USG of a Dog at the Clinics, Mohanpur

### E.4.2.HIGHLIGHTS OF THE PROJECTS CONDUCTED IN THE FACULTY OF FISHERY SCIENCES

#### 1. NICRA project on Development of Climate resilient aquaculture strategies for Sagar and Basanti Block of Indian Sundarbans

For the year 2014-15, four programmes were taken up - (i) survival and growth performances of few brackish water fish species in freshwater (ii) survival and growth performances of 11 fresh water fish species at different salinity, (iii) development climate-resilient aquaculture strategies for better adaptation to conditions brought about through climate change, notably increased salinity and (iv) strengthen the capacity of fish farmers to prepare and respond effectively to future climate-induced changes.

##### Salient achievements (2014-2015)

1. *Macrobrachium rosenbergii* was found to be the most tolerant species followed by *Channa punctatus*, *Puntius javanicus*, *Cyprinus carpio*, *Puntius sarana*, *Labeo rohita*, *Cirrhinus mrigala*, *Ctenopharyngodon idella*, *Catla catla*, *Hypophthalmichthys molitrix* and *Labeo bata*.
2. Eight brackish water species viz., *Liza parsia*, *Scatophagus argus*, *Liza tade*, *Terapon jarbua*, *Eetroplus suratensis*, *Mystus gulio* and *Penaeus monodon* thrived well and grew satisfactorily in freshwater.
3. Climate Resilient Species combinations for the salinity intrusion zone of Sundarban were finalised
4. Climate adaptive integrated farming technique through incorporating salt tolerant fish, livestock, horticulture and crop varieties were developed
5. Trial Fish feed (to combat salinity stress) for demonstration was developed (total energy-3000 kcal/kg.) with the ingredients of soya meal, fish meal, wheat bran, vegetable oil, vitamin, mineral, immunostimulant. Irrespective of species and salinity levels, this high energy feed exhibited significantly better growth than normal feed.
6. Two farmers training cum demonstration on "Climate Resilient Aquaculture for Sundarban" was conducted.
7. **Climate Resilient Species combinations for the salinity intrusion zone of Sundarban**

Based on species specific salinity tolerance and adaptability study; post-flooding growth performance of freshwater fish and survival and growth performance of brackish water fish in freshwater trial and growth





## RESEARCH (Contd..)

and production trend obtained so far the following species combinations are proposed for different saline water flooding prone zones of the Sundarban:

➤ **Species suitable for areas vulnerable to low saline water flooding (upto 5 ppt)**

i) *Labeo rohita* ii) *Catla catla* iii) *Cyprinus carpio* iv) *Ctenopharyngodon idella* v) *Hypophthalmichthys molitrix* vi) *Macrobrachium rosenbergii* vii) *Puntius javanicus* viii) *Penaeus monodon* ix) *Terapon jarbua* x) *Scatophagus argus* xi) *Liza parsia*

➤ **Species suitable for areas vulnerable to medium saline water flooding (upto 10 ppt)**

i) *Labeo rohila* ii) *Puntius javanicus* iii) *Cyprinus carpio* iv) *Macrobrachium rosenbergii* v) *Puntius sarana* vi) *Ctenopharyngodon idella* vii) *Cirrhinus mrigala* viii) *Penaeus monodon* ix) *Terapon jarbua* x) *Scatophagus argus* xi) *Mystus gulio*

➤ **Species suitable for areas vulnerable to high saline water flooding (above 10 ppt)**

i) *Cyprinus carpio* ii) *Puntius javanicus* iii) *Penaeus monodon* iv) *Terapon jarbua* v) *Scatophagus argus* vi) *Macrobrachium rosenbergii* vii) *Etroplus suratensis* viii) *Liza parsia* ix) *Mugil cephalus* x) *Mystus gulio*

### 8. Climate adaptive integrated farming

In order to enhance the resilience among the marginal fish farmers of Sundarban, livestock crop integration with aquaculture as Climate Adaptive Integrated Farming (CAIF) has been tried and was found not only profitable but has been able to make the system more resilient towards extreme events due to climate change. Incorporation of salt tolerant fruits and horticultural crops with salt tolerant aquacultural species has resulted in better economic returns, capacity enhancement and reduced risk. This is achieved through land shaping, reclamation, re-excavation of ponds including 3-tier step-cutting or terracing on inward slopes of the ponds. Plantation on the top of the dyke has resulted in its strengthening

### 2. Determination of the conservation value of the Mangroves of Indian Sunderban

The Indian Sundarban mangrove forest covers an area of about 4,267 sq km which is administratively divided into Sundarban Tiger Reserve (STR; 2585 sq km) and 24-Parganas (South) Forest Division (1682 sq km). About 1,255 sq km of the Tiger Reserve area serves as the buffer zone, where limited fishing activities are permitted with prior permission of the Forest Department.

Rest of the mangrove area is spread over parts of two districts viz. North 24- Parganas and 24-Parganas (South), covering 19 community development blocks, 190 Gram Panchayats and 1064 villages with human settlements. The present survey work was carried out for the 69 mangrove patches (613 nos of sub patches) spread over 10 community development blocks with the total area of 153.2596 sq km approximately. The average area of each patch is 2.23 sq km. This is the first time that this kind of comprehensive survey work (Rapid Biodiversity Inventory) to assess the status of mangroves, its associated flora and associated fauna were carried to find out their conservation values. Most of the patches falling in eastern sector were sparse in nature whereas many of the patches of central and western sectors were dense in nature. During the survey we observed that the diversity was more in central and western sector compared to eastern sector. The eastern sector patches are planted ones and have more human pressure compared to the patches of central and western sectors.

It has been observed that people settled around the patches have become more alert in protecting the nearby patches. However at few sites we could observe reclamation of land after clearing the existing mangroves for aquaculture purposes, house construction and also cutting of trees or branches for their local needs. At many patches, especially in eastern sector, we didn't find many seedlings due to grazing by livestock. We could also observe wide spread catching of prawn seeds by local villagers using cloth type

## RESEARCH (Contd...)

small drag nets having very small mesh size. During this process there has been wide spread destruction of seeds of other fishes also.

Overall diversity among mangroves and associate flora and fauna have been found to be more in central and western sector compared to eastern sector. However, compared to previous years, the diversity seems to have come down drastically.

It has also been observed that many hotels have already been built or being constructed near to these patches and the number of tourists and tourist boats have increased many folds during last few years.

### 3. Surveillance of diseases of aquacultured finfish and shellfish and development of disease management strategies

#### Salient achievements

- a) Created facilities for fish disease diagnosis
- b) Created a database on diseases of freshwater and brackish water fish of West Bengal
- c) Documented the pathology of carp and catfish diseases
- d) Documented the pathophysiology of carps
- e) Documented the status on emerging finfish and shellfish diseases
- f) Identified the suitable stress indicators in carps and catfish
- g) Identified the potential growth indicators in carps and catfish
- h) Immune markers for the selection of disease resistant carps stocks
- i) Probiotics and immunomodulators for carps
- j) Developed skilled human resources
- k) Molecular characterization of *Myxobolus* spp.
- l) Molecular characterization of *Thelohanellus* spp.
- m) Molecular characterization *Argulus* spp.
- n) Reported a new disease, Flectobacillosis in *Labeo rohita*
- o) Reported the incidence of cyprinid herpes virus 2 disease in *Carasius auratus* and validated by the National referral laboratories
- p) Reported the incidence of cyprinid herpes virus 3 disease in *Carasius auratus* and the finding is yet to be validated by the National referral laboratories
- q) Reported the incidence of lymphocystis viral disease in *Anabas testudineus*, confirmed by histopathology / shrimp (acidosis, alkalosis, high algal bloom, asphyxiation etc.

### 4. Development of Surveillance Programme for Aquatic Animal Diseases in West Bengal

Some of the major fish diseases which have been identified in West Bengal during the surveys undertaken by the project are:

**Bacterial** – Motile *Aeromonas* Septicaemia, Edwardsiellosis and Vibriosis;

**Viral** – White Spot Syndrome Virus in shrimp;

**Parasitic** – Myxoboliosis, Thelohanellosis, Argulosis, Dactylogyrosis, Lernaeosis, Trichodiniasis, Leeches etc.

**Other types** – Nutritional health hazards (muscle cramp in shrimp, softshellness in shrimp, stunted growth, scoliosis, weight loss etc. and environmentally induced diseases in fishes/shrimp (acidosis, alkalosis, high algal bloom, asphyxiation etc.



## RESEARCH (Contd...)



Surgery of a dog in the Dept. of TVCC, Mohammar

Conservation of Haringata Black  
Breed at village level



Student in a Diagnostic Lab at  
Clinics (Mofunpur)



### E.4.3. HIGHLIGHTS OF THE PROJECTS CONDUCTED IN THE DIRECTORATE OF RESEARCH, EXTENSION & FARMS

#### 1. Pilot project on climate-resilient adaptation through physical protection and enhanced food production for Indian Sundarbans

Mousuni island, the project site is encircled by Muriganga river in the west and north-west, Chenayer river in the east and the Bay of Bengal in the south. Total land area of this island is 30 sq. km. which supports a population of 22,000. The Island is experiencing many climate induced stresses like increase in extreme weather events, sea level rise, accelerated coastline erosion, submergence of land, salinisation etc. In the recent years this island has been facing acute problem of accelerated coastline erosion as well as periodic flooding of homestead and productive agricultural lands with saline water due to breach of embankments in many parts of this island, especially on the western side. Small farmers, when faced with the situation of being unable to cultivate their land or of having completely lost their land due to flooding, either turn to fishing or migrate as unskilled labourers, which results in a lower quality of life.

## RESEARCH (Contd...)

### Major Achievements:

- Vulnerability assessment of the island was conducted through topographic survey, embankment survey and social survey with the help of Jadavpur University. It included micro-level risk zoning and spatial planning to identify the vulnerable stretches of embankment, low-lying areas within the island which are vulnerable to coastal flooding, close grid elevation survey to prepare elevation map, and socio-economic survey to identify households' vulnerability of the island.
- Awareness campaigns were organised regularly to aware the people about the climate induced variability. A knowledge-attitude-practice survey was conducted to assess the level of awareness and knowledge of the community on climate change and its impacts on their livelihoods especially agriculture and aquaculture.
- The volunteers from the island were trained on Community Based Disaster Management (CBDM) by trainers from Lutheran World Services India Trust (LWSIT). Under each tem, 5 task forces were formed with distinct different responsibilities such as: (i) early warning and rescue, (ii) shelter management, and water and sanitation, (iii) primary health care, (iv) damage and loss estimation, and (v) coordination.
- Farmers were motive to cultivate 6 salt tolerant paddy varieties namely *Talmugur*, *Nonashal*, *Nonabokhra*, *Sadagetu*, *Lalgetu*, and *Hamilton*. These varieties showed tolerance against saline water flooding and farmers were able to get satisfactory yield despite flooding, where as farmers growing conventional high yielding varieties suffered loss.
- Five salt tolerant indigenous Fish and prawn species were introduced in freshwater ponds of farmers alongwith the freshwater species. The species were: *Liza tade* -Tade Grey Mullet, *Liza parsia* - Goldspot Mullet, *Scatophagus argus* - Sopttd Scat, *Mystus gulio* and *Penaeus monodon*-Tiger Shrimp. These species showed good survival and growth in freshwater. To enhance the income from these ponds, fish-livestock-crop integration was adopted. Horticultura crops like mango, coconut, sapodilla (local name - Sapeda) and Java apple (local name - Jamrul) were planted on the pond dykes.
- A Climate Change Information and Adaptation Centre has been established which is acting as a nodal centre for enhanced knowledge dissemination (on climate change and adaptation practices) and coordination centre (for disaster response).
- An Innovative Embankment Design has been developed with the help of Indian Institute of Technology Madras (IIT-M) for Physical Protection of Island. The pilot testing of this design at a vulnerable stretch is under the consideration of the funding agency.

### 2. Pre-feasibility Study for an Envisaged Sustainable Aquaculture Programme under Indo German Financial Cooperation

The overall purpose of this study is to collect and analyse information, which will enable the relevant Indian partner and KfW to assess whether a financial cooperation in the field of sustainable aquaculture would be viable. Therefore, the consultants' tasks include, but not limited to, assessing, analysing and reporting on the following aspects:

- Analysis of current strategies and approaches of Govt. of India on Sustainable Aquaculture and related issues;
- Compilation and assessment of the current status of policies and national programmes on Sustainable Aquaculture on central and state level, including the needs for certification, labelling;
- Analysis of current and planned promotional measures for Sustainable Aquaculture of other bilateral and multilateral donor organizations in India;
- Assess the current business models for Sustainable Aquaculture relevant in India and undertake a SWOT analysis;
- Role of credit at different nodes of value chain, existing credit instruments, type of credit accessed by the existing small-scale fish farmers and scope / need for introducing new variants of credit instruments;
- Identify/assess investment and capacity building needs, investment alternatives, absorption capacity, and financing mechanisms;





## RESEARCH (Contd...)

- Provide general justifications for supporting Sustainable Aquaculture in India;
  - Identify main NGOs which are active in the Sustainable Aquaculture sector and assess their potential, preparedness and interest for possible partnership;
  - Analyse demand for loan financed promotion measures;
  - Provide a conclusive assessment as to whether or not KfW shall pursue a Sustainable Aquaculture project;
  - In case of a positive conclusion, identify the relevant line department or other government agency to act as project executing agency, or discuss the option to include Sustainable Aquaculture as a separate window to a possible Umbrella Programme Phase III in cooperation with NABARD.
  - Recommend a viable implementation structure for a loan based programme on
1. A national Sustainable Aquaculture FC Programme, with NABARD or a relevant central Ministry as Project Executing Agencies
  2. State led Sustainable Aquaculture Programme, with single and direct agreements between KfW and respective state departments as Project Executing Agencies, but possibly organised as a national umbrella programme.

To capture a wider diversity of viewpoints on the proposed loan based programme, four stakeholder groups (practicing farmers, NGOs, Banks / MFIs and Govt. officials) are included for the questionnaire based survey, Focus Group Discussion (FGD) and Workshop. Five leading fish producing states, namely West Bengal, Odisha, Bihar, Assam and Andhra Pradesh are covered in this study. So far a number of findings have emerged from the pre-feasibility study on loan-based support programme for sustainable aquaculture. These include the following points.

- There is a clear demand for subsidized loan-based support programme for sustainable aquaculture both in freshwater and brackishwater sectors in India.
- All projects under the proposed programme should ensure sustainable management of aquaculture resources, involve local community participation, increase farm production, create livelihood opportunities, and strengthen value chain.
- The vulnerable sections of the society (scheduled castes, scheduled tribes, minorities, women etc.) should be given priority while selecting the beneficiaries for the programme.
- Aquaculture needs flexible loan terms (*i.e.* in interest rate, tenure, gestation period, collaterals etc.) as nature of culture varies from species to species, region to region and between freshwater and brackishwater. Hence, financial programme should be tailor-made depending on the nature of aquaculture, the implementing partner and the target group.
- Private-Public partnership should be encouraged in project implementation. Non-government organisations, community based organisations, cooperatives, producer companies, microfinance-finance institutions, banks, public sector agencies, etc. should join hands for successful project implementation and linking aquaculture activities to existing value chains.
- Apart from mainstream aquaculture, out-of-the-box activities like integrated fish farming with livestock and /or agriculture, climate resilient aquaculture in vulnerable areas, women-oriented ornamental fish farming, certified organic aquaculture through farmer group, community based aquaculture in village pond / derelict water body etc. can be promoted through the proposed programme.
- Conventional finance delivery system through bank requires clear title for fishpond, collateral from farmer and long documentation. These keep the small and marginal fish farmers shy away from bank loans. Hence, options of group-based finance models through Self Help Groups (SHGs) / Joint Liability Group (JLG) should be explored as finance delivery system for small and marginal fish farmers and to ensure timely repayment.
- Soft loan with a grant facility would ensure economic viability and reduce the risk of loan default. Grant component should be utilized for capacity building trainings, crop insurance, administrative cost of NGO, creating common facilities, supplying critical input, etc.

## RESEARCH (Contd...)

- Piloting of Grant cum-loan model in aquaculture is preferred before final implementation of the proposed programme.
- 3. **Environmental and Social Impact Assessment for Traditional Shrimp Farming Clusters in North 24 Parganas District of West Bengal**

Organic Services is an international consultancy firm with its head office at Landsberger Str. 527, 81241 München, Germany. The organisation has been involved in setting up various organic aquaculture projects world-wide. The firm is now taking up a pilot project in India which intends to convert some traditional shrimp farming clusters to organic shrimp production zone in Basirhat II Block of North 24 Parganas district. To add value to the organic certification, the firm has awarded the consultancy service to the University for conducting Environmental and Social Impact Assessment (ESIA) study in the pilot project area. The specific objectives of the study are:

- To identify potential environmental social impacts (if any) of traditional shrimp farming activities in the pilot project area,
- To evaluate alternative approaches, and to design and incorporate appropriate prevention, mitigation, management and monitoring measures.
- To use EIA as a tool for facilitating the production of organic shrimp from the project area.

The study would cover following areas.

- Detail overview of the project locations, its existing settings and special ecological features
- Demographic features of the locality
- Assessment of resource users and conflicts
- Livelihood study of fish farmers, farm workers
- Climatic time series and variability data analysis
- Assessment of terrestrial biological resources
- Source of water and its environmental quality
- Environmental quality of cultured farm
- Environmental quality of discharge
- Assessment of environmental/public health hazards factor
- Detail existing aquaculture practice and management
- Production and economics analysis
- Strategic Impact Assessment

- 4. **National Information System in Agricultural Education Network of India (NISAGENET)**

The National Information System on Agricultural Education Network in India (NISAGENET) portal is being maintained at the Central Server of IASRI, New Delhi under the supervision of NISAGENET team, IASRI, to provide reports on agricultural education in India. It provides a unified information system for collection, compilation and analysis of data about the activities of the agricultural education system in India. The portal provides a wide spectrum of information relevant to the SAUs and Deemed universities under ICAR.

West Bengal University of Animal and Fishery Sciences had established a NISAGENET Cell in January, 2005 to update and upload information about the University on the NISAGENET portal server.

The NISAGENET system provides an uniform system on collection, compilation and analysis of information about the activities of the agricultural education system in India. It will provide all the information as desired by National Statistical Commission (NSC-2001). The statistical data is being provided to Ministry of HRD from IASRI, New Delhi, as per requirement from time to time.



# EXTENSION ACTIVITIES



The ultimate goal of Extension activity is to increase the productivity of the animal and fishery sectors and generate employment as well as income. On the other hand, need-based feed back to influence the research, education and training module set up for development of technologies are received out of these activities. There is always an emphasis on farmers' participation while organization of such extension programmes in the country. This system operates as a farmers' programme with the presence of scientists and extension educationists, alongwith the support and initiative of the Government and non-government organisations. The extension system has to deal with socio-economically weak farming community, which is large in size, with either small or no landholdings thus demanding for lesser infrastructural requirement for their development.

## F.1. EXTENSION EDUCATION

Directorate of Research, Extension & Farms administers the planning and execution of all the extension activities of the University in close consultation and cooperation of the faculty members through the Deans of the faculties. It collaborates and coordinates the research findings and outreach programmes with the State Govt. Department of Animal Resource Development, Fishery Development and other Governmental and Non-Governmental agencies. It also organizes various sorts of training programmes and refresher courses at regular intervals. Another extensional activity is to publish periodicals, newsletters, research highlights, leaflet, booklets etc. to create awareness amongst the farmers on latest developments in the field of Veterinary, Dairy and Fishery Sciences. The Directorate also responsible for organizing awareness camps, production of documentary films, participation in technology demonstration fairs and exhibitions, radio and TV shows at frequent intervals. It also organizes different types of programs with the aim to disseminate technologies evolved in the University, to the rural mass through its extension wing. The Directorate also guides and supervises the activities of the different KVKs under its control. Moreover, it monitors the extension of knowledge and information about the activities of the University through the use of print media and web media.



Participants of Stakeholders Consultation Workshop held at University Headquarter under a kfw funded project on 27.12.2014

## EXTENSION ACTIVITIES (Contd...)

F.2. CONFERENCE/WORKSHOP/SYMPOSIUM/SEMINAR/ TRAINING PROGRAMMES  
ORGANISED BY DIFFERENT DEPARTMENTS OF WBUAFS .

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
<b>Faculty of Veterinary &amp; Animal Sciences</b>						
1	Methods of Applied Livestock Research: Treatments, Design, Implementation, Analysis, Interpretation, and Publication	Workshop	Animal Nutrition	WBUAFS Belagachia	1 day 16/06/2014	
2.	Application of molecular (Real-time PCR) and immunological (immuno-chromatography) diagnostic methods	Training	Veterinary Parasitology	WBUAFS Belagachia	2 days 3 <sup>rd</sup> & 4 <sup>th</sup> March, 2014	PG & Ph.D. students and Faculty members of VAS
3	Role of CPCSEA in Animal Welfare	Workshop	Prof. T.K. Mandal, Vet. Pharm. & Toxicology, Organizing Secretary	WBUAFS Belagachia	1 day 2 <sup>nd</sup> August, 2014	PG & Ph.D. students and Faculty members of VAS
4	6 <sup>th</sup> East Zonal & 24 <sup>th</sup> Annual State Conference of Indian Pharmacological Society, West Bengal	Conference	Prof. T.K. Mandal, Vet. Pharm. & Toxicology, Organizing Secretary	WBUAFS Belagachia	2 days 6 <sup>th</sup> & 7 <sup>th</sup> February, 2015	Faculty members of VAS & members
5	Preconference workshop on Analysis of drugs in biological matrix	Workshop	Prof. T.K. Mandal, Vet. Pharm. & Toxicology,	WBUAFS, Mohanpur campus	1 day 5 <sup>th</sup> February, 2015	Faculty members of VAS & members
6	Advancement in physio-biochemical techniques for assessing animal health status (Dept of Vety Physiology along with the Dept of Vety Biochem. In collaboration with West Bengal Veterinary Council and Directorate of Animal Resources & Animal Health	Workshop	Vety Physiology	5 days 26 <sup>th</sup> to 30 <sup>th</sup> August, 2014		





## EXTENSION ACTIVITIES (Contd...)

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
<b>Faculty of Fishery Sciences</b>						
1	Disease Issues and Health Management in Aquaculture Systems sponsored by NFDB	Training	Dr G. Dash, AAH, FS	WBUAFS, Chakgaria campus	5 days 16-20 <sup>th</sup> Feb, 2015	Fish farmers
2	Disease Issues and Health Management in Aquaculture Systems sponsored by NFDB	Training	Dr G. Dash, AAH, FS	WBUAFS, Chakgaria campus	5 days 09-13 <sup>th</sup> March, 2015	Fish farmers
3	Disease Issues & preventive health Management in Aquaculture sponsored by NSPAAD	Workshop	Dr G. Dash, AAH, FS	WBUAFS, Chakgaria campus	1 day 24 <sup>th</sup> March -2015	Fish farmers & other beneficiaries
4	Fish Farmers Training Programme	Training	Dept. of AEM	Bali Island Sundarban	3 days 7 <sup>th</sup> -9 <sup>th</sup> March, 2015	Fish farmers
5	Fish Farmers Training Programme	Training	Dept. of AEM	Basanti, Sundarban	3 days 20 <sup>th</sup> -22 <sup>nd</sup> March, 2015	Fish farmers
6	Expert Consultation on Climate Resilient Aquaculture Strategies for Indian Sundarban	Workshop	Dept. of AEM & Project	VCI Auditorium, Belgachia	1 day 25 <sup>th</sup> March, 2015	NGO, Bank Officials, Officials of State Fisheries & WBUAFS Dept. ICAR Scientists & Progressive farmers

## DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
1	On-Farm Training Programme for 4 <sup>th</sup> year B.F.Sc. students	Training	DREF	Farmer's Hostel, Belgachia	11 days 18 <sup>th</sup> - 28 <sup>th</sup> Nov., 2014	Final Year students of BFSc. Course
2	HRD programme for KVK personnel	Training	DREF	Farmer's Hostel, Belgachia	3 days 2 <sup>nd</sup> - 4 <sup>th</sup> Feb., 2015	PC & SMS of KVK
3	Exposure visit of farmers of KVK	Training	DREF	Farmer's Hostel, Belgachia	3 days 23 <sup>rd</sup> -25 <sup>th</sup> Feb., 2015	Farmers from different KVKs
4	Stakeholders Consultation Workshop on Sustainable Aquaculture on Indo-German Financial Cooperation	Workshop	DREF	Farmer's Hostel, Belgachia	1 Day 27 <sup>th</sup> Dec. 2014	Stakeholders of the Project
5	Seminar on "e-learning portal on agricultural education"	Seminar	NISAGENET Cell, DREF, WBUAFS	Farmer's Hostel, Belgachia	1 day 21/01/2015	Faculty members, students of WBUAFS
6	Participation in Agri-Horti-Food Fest-2015 (Govt. of W.B.)	Exhibition Stall	DREF	Netaji Indoor Stadium	3 days 26 <sup>th</sup> -28 <sup>th</sup> Feb., 2015	Stalls from different orgs. of private & Govt.

## EXTENSION ACTIVITIES (Contd...)

### F.3. CONSULTANCY CELL AND ADVISORY SERVICES

The Extension wing of the Directorate of Research, Extension and Farms provides Consultancy and Farm Advisory services to the stakeholders in the fields of livestock farming, dairy product processing and fish farming. Faculty members and officials/scientists of the University render their expertise through field visits, farm or home visits, face-to-face discussions, over telephone, e-mails and postal communications. During 2014-2015 a good number of persons were rendered technical advises through this Directorate. The Extension wing also provides consultancy on animal husbandry, dairy technology and fishery related laboratory and field services. A good number of Consultancies for establishment of livestock, dairy and fishery farms as well as other animal origin food products processing projects / schemes were provided during 2014-2015 through the Consultancy Cell. Such consultancies were provided to the clientele through the Individual or group consultants from the University. In addition, need based training and distribution of extension literature to the beneficiaries is being made available during such Advisory and Consultancy services.

### F.4. DOCUMENTARY FILMS PRODUCED

Six numbers of Documentary Video film have been produced by WBUAFS till date.

Sl.No.	Title	Subject	Language
1.	Gabadi	Cattle husbandry	Bengali
2.	Garoler golpo	Garole sheep husbandry	Bengali
3.	Chhagoler golpo	Bengal goat husbandry	Bengali
4.	Hangsomin	Integrated farming of duck cum fishery	Bengali
5.	Choroibeti	Institution Village Linkage Programme	Bengali
6.	Ghoongroo	Ghoongroo pig production through Centrally sponsored scheme on Threatened breed – Ghoongroo pig	Bengali



Bathymetric survey team under GIZ funded project



Overseas buyer visiting the organic shrimp farming site



## EXTENSION ACTIVITIES (Contd...)

Copies of these documentaries are available for sale through the Extension wing of the Directorate of Research, Extension & Farms.

A documentary film entitled on "Sustaining Communities in the Sunderbans through Adaptation" of duration of 24 minutes was prepared by the GIZ project.

### F.5. ORGANIZATION OF ANIMAL / FISH HEALTH CAMPS

The West Bengal University of Animal & Fishery Sciences is working with a special attention towards upliftment of social status of the rural poor people of the State. The Directorate of Research, Extension and Farms leads the extension services on behalf of the University to the farming community residing at remote villages, where conventional aid systems are yet to reach. Some of the teaching departments of the Veterinary and Animal Sciences faculty alongwith the Extension wing of the Directorate of Research, Extension and Farms regularly organize treatment camps or vaccination camps free of cost against major livestock diseases at different corners of the State. During the reporting period, a total of nearly 15 animal health camps have been organized throughout the State.

In the similar fashion, the faculty of Fishery Sciences also organizes fish health camps and extends advisory services free of cost to the practicing fishermen inhabiting at different remote areas of the State.

### F.6. WOMEN EMPOWERMENT

The majority of the activities of livestock keeping are carried out by the women folk in the Indian households. The same is also applicable for indigenous dairy product preparation and fishery operations. The State has some thrust area of activities for the upliftment of the status of rural women. Since its inception, the University is working towards improvement of the womenfolk through the development of their socio-economic status. The University organizes skill development training programmes, sensitization camps, capacity building programmes and awareness camps for the self-help groups regularly for the betterment of the farming women. The Krishi Vigyan Kendras at Murshidabad, North 24 Parganas and Jalpaiguri districts under the aegis of WBUAFS, are also organizing specific women empowerment and drudgery reduction programmes at regular intervals throughout the year.



Seminar on 'e-learning portal on Agricultural Education' on 21st January, 2015



University Officials and PI attending a Stakeholders Consultation Workshop (German Development Bank – kfw)

## EXTENSION ACTIVITIES (Contd...)

### F.7. PUBLICATIONS

The publication of newsletters, extension literature like leaflets, booklets, pamphlets, handouts etc. are published and updated regularly by the Extension wing of Directorate of Research, Extension & Farms. The Directorate also monitors publication of research papers and scientific popular articles in different print, electronic and web media as released by the faculty members, scientists and officials. Various reports on research findings, practical class manuals, training programme compendiums are also being prepared under the active supervision of the Directorate of Research, extension and Farms in the University. The extension literatures are distributed amongst the stakeholders through the Extension wing of the Directorate.

#### F.7.1. PUBLICATION OF ACADEMIC, SCIENTIFIC AND EXTENSION LITERATURES (2014-15):

1.	WBUAFS Newsletter	1
2.	University Annual Report	1
3.	Research Project Annual Reports	3
4.	Status Report of KVKs under WBUAFS	3
5.	Monograph	1
6.	Course Practical Manuals	4
7.	Laboratory Manuals	6
8.	Text Books and other Books	16
9.	Extension Book/Booklets/Pamphlets (Bengali)	20
10.	Folder in English	1
11.	Folder in Bengali	1
12.	Folder in other languages	2
13.	Compendium of Training Programmes	5
14.	Project Bulletin	1

### F.8. ACTIVITIES OF KRISHI VIGYAN KENDRAS

The KVKs are front-line extension centre for agriculture and allied sectors financed by ICAR. It is actually a network of pioneering science based institution, which primarily works to exert a powerful influence on the extension system of the district, caters to the training needs of the farmers and extension functionaries, and facilitates the spread of technologies tailored to the diverse environment of farmers. It works on the principle of "Teaching by Learning" and "Learning by Doing" methods.

Brief report on the activities of the KVKs under WBUAFS are depicted below :



University Cattle Farm at Mohanpur





## EXTENSION ACTIVITIES (Contd...)

### F.8.1. KRISHI VIGYAN KENDRA, JAI PAIGURI

Details of target and achievement of mandatory activities by KVK during 2014-15

OFT				FLD			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
8	5	68	45	17	12	221	181

Training				Extension activities			
Number of Courses		Number of Participants		Number of activities		Number of participants	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
105	115	3225	3910	583	629	10583	9475

Seed production (q)		Planting material (Nos.)	
Target	Achievement	Target	Achievement
30	27	50000	45119

Details of Training Courses organized by the KVK:

#### a) Practicing Farmers / Farm Women:

No. of training courses	No. of participants											
	Others			SC			ST			Total		
	M	W	T	M	W	T	M	W	T	M	W	T
92	422	109	531	1812	532	2344	248	118	366	2501	755	3256

#### b) Rural Youth:

No. of training courses	No. of participants											
	Others			SC			ST			Total		
	M	W	T	M	W	T	M	W	T	M	W	T
10	35	1	36	181	57	238	12	1	13	228	59	287

#### c) Extension Functionaries:

No. of training courses	No. of participants											
	Others			SC			ST			Total		
	M	W	T	M	W	T	M	W	T	M	W	T
13	120	2	122	204	4	208	25	14	39	346	21	367

**EXTENSION ACTIVITIES** (Contd...)**Vocational training programmes for Rural Youth**

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
				Male	Female	Total	Type of units	Number of units	Number persons employed	
Vermi Composting	Organic matter production	Technique of vermin-compost production	4	22	3	25	Portable Vermi bed	8	2	

**Extension Activities (including activities of FLD programmes)**

Nature of Extension Activity	No. of activities	Farmers			Extension Officials			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day Kalo Nunia -1 Seed Bed Techniques Non conventional vegetable, Turmeric, Colocasia	12	370	180	550				370	180	550
Kisan Mela Celebration of Technology Week-2015 13/2/15 to 17/2/15 at KVK & Celebration of Kisan Mela on 30 <sup>th</sup> March, 2015	2	2250	1750	4500	445	35	480	2695	1785	4480
Kisan Ghosthi	3	78	-	78	12	-	12	90	-	90
Exhibition:Block Krishi mela at Maynaguri, Malbazar, Meteli	3	380	110	490	18	5	23	398	115	513
Film Show on Training programme	6	185	25	210	12	4	16	197	29	226
Method Demon- strations										
Farmers Seminar										
Workshop:										
Group meetings for model village	2	15	-	15	4	-	4	19	-	19
Lectures delivered as resource persons	12							510	168	898





## EXTENSION ACTIVITIES (Contd...)

Advisory Services . IPM & Livestock Farming	6	-							
Farmers Advisory Service: <b>Animal Science: Attended as Guest &amp; Judge of Calf Show at Prani Sampad Saptaha at Haldibari Block, Coochbehar Krishi Mela: 17/1/15 &amp; 18/1/15</b>	30	16	4	20			16	4	20
<b>Extension Activity:</b> Horizontal spread of RIR birds distribution of hatchable RIR eggs from KVK RIR Unit for chicks production by brooder birds	3	8	24	32			8	24	32
Scientific visit to farmers field	135	215	45	260			215	45	260
Farmers visit to KVK		364	135	499			364	135	499
Diagnostic visits	8								
Exposure visits	6								
Ex-trainees Sammelan	2								
Soil health Camp									
Animal Health Camp	2								
Agri mobile clinic									
Soil test campaigns									
Farm Science Club Conveners meet	5								
Self Help Group Conveners meetings	4								
Mahila Mandals Conveners meetings									
<b>Celebration of important days: Awareness Camp: KVK awareness</b>	1	20	10	30			20	10	30
<b>Awareness Seminar on Arannya Saptaha</b>	1	55	22	77			55	22	77
<b>Awareness Programme on SWACHH BHARAT</b>	1	31	19	50			31	19	50
<b>World Food Day – 2014 16/10/14</b>	1	79	-	79			79	-	79

## EXTENSION ACTIVITIES (Contd...)

Awareness Camp on 19 & 21/11/14	2	120	35	155				120	35	155
Awareness Camp 17/1/15 & 19/1/15 Grow Safe Food	2									
Awareness Camp: 16/2/15										
National Science Day: 28/2/15		51	4	55				51	4	55
Phone Received	296									296
SMS Portal	82									1146
<b>Total</b>	<b>629</b>	<b>4237</b>	<b>2363</b>	<b>7100</b>	<b>491</b>	<b>44</b>	<b>535</b>	<b>5238</b>	<b>2575</b>	<b>9475</b>



Inauguration of technology week at Jalpaiguri KVK





## EXTENSION ACTIVITIES (Contd...)

### Production of planting materials by the KVK

Crop	Variety	No. of planting materials	Value (Rs)	Provided to number of farmers
<b>Vegetable seedlings</b>				
Broccoli	F Everest	14,000	7,000.00	12
Red Cabbage	Red King/ Red ewel	13,500	6,750.00	12
Tomato	Raki	1400	1400,00	16
Brinjal	Local	850	1,700,00	8
Chilli	Barsati2200550,008			
Onion	Red Globe	10,500	2,100,00	2
Others				
<b>Fruits</b>				
Mango				
Guava				
Lime	Kagzi	150	4500,00	3
Papaya				
Banana				
Others				
Ornamental plants	Gladiolus(White Prosperity, Red Ginger, Summer Sunshine)	2500	6,250,00	2
Medicinal and Aromatic				
Plantation				
Spices				
Turmeric	Suranjana	9	22,500	8
Tuber	Colocasia (Panchamukhi)	6	13,200	5
Elephant yams	Kovur	4	10,000	4
Fodder crop saplings				
Forest Species				
Others, pl.specify				
<b>Total</b>		<b>45,119</b>	<b>59,450.00</b>	<b>80</b>

## EXTENSION ACTIVITIES (Contd...)

### Production of livestock materials

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers
Dairy animals				
Cows				
Buffaloes				
Calves				
Others (Pl. specify)				
Poultry	RIR -Poultry	450	11,250	18
Broilers				
Layers				
Duals (broiler and layer)				
Japanese Quail				
Turkey				
Emu				
Ducks				
Others (Pl. specify)				
Piggery	Ghungroo	8	64,000	KVK farm
Piglet	Ghungroo	12	30,000	3
Others (Pl. specify)				
Fisheries				
Indian carp				
Exotic carp				
Others (Pl. specify)				
Grand Total		470	1,05,250	21



Hon'ble Vice-Chancellor presiding over SAC Meeting - 2015 at Jalpaiguri KVK



RIR Poultry Distribution under TSP Programme, Jalpaiguri KVK





## EXTENSION ACTIVITIES (Contd...)

### Achievements of On Farm trial / testing conducted during the year 2014-15

- **OFT-1-Assessment of integrated nutrient management practice in scented rice ( Var. Kalo Nunia ) to increase yield and improve its quality.**

**Recommendation:** Vermi compost @ 20 q/ha + 50% recommended NPK (30:15:15 kg NPK/ha) as chemical fertilizer application produced highest yield 36 qtls /ha. of scented rice (var. Kalo Nunia ) and this technology option also gave highest benefit cost ratio of 1.68

- **OFT-2- Assessment of nutrient management for growth and yield of Brinjal**

**Recommendation:** From the experiment it was revealed that the number of productive shoot was highest 12 in **improved management 1**. It was also observed that the infestation was lower in **improved management 1**. Benefit: cost ratio were also highest in **improved management 1** (2.11) and lowest in Farmer's practice (1.85). From the results it may be concluded that the **improved management 1 i.e. RDF (N-P-K@100-50-50 kg/ha), soil application of borax @10 kg/ha and spray micronutrient @2 ml/lit** was the best among all the management practice.

- **OFT-3- Assessing the nursery technique for seedling production of winter vegetables**

**Recommendation:** From the experiment it was revealed that the number of healthy seedlings was highest 920 in **improved management 2 and lowest in Farmers' practice** (630) during studied after germination of 1000 seedlings. It was also observed that the disease infestation was lower in **improved management 2**. Benefit: cost ratio were also highest in **improved management 2** (1.06) and lowest in Farmer's practice (0.99). From the results it may be concluded that the **improved management 2 i.e. Healthy seedbed and apply inoculated Vermicompost (*Trichoderma viridae*)@100g with 20kg/bed(3x1m)** was the best among all the management practice.

- **OFT-4- Assessment of freshness and self life of vegetables under different storage Condition of rural household**

**Recommendation:** From the experiment it was revealed that the percentage of weight loss was highest in farmer's practice (26) and lowest in **improved management 2** (12). It was also observed that the spoil vegetable was lower (14 days Storage) in **improved management 2** and spoil started after 11 days. From the results it may be concluded that the **improved management 2 (i.e. Keeping vegetable fresh in the bamboo basket wrapping with water soaked gunny bag)** was the best among all the management practice.

- **OFT-5-Assessment of scientific management of hump sore of ploughing animal Recommendation: Ongoing**

### Details of HRD programmes undergone by KVK personnel:

Sl. No.	Name of programme	Name of course	Name of KVK personnel and designation	Date and Duration	Organized by
1	Workshop on Writing Success Stories	Workshop on Writing Success Stories	Dr. Soma Banerjee	27 <sup>th</sup> to 29 <sup>th</sup> August, 2014	ICAR
2	HRD programme	Training cum Audit	Mr. Sujit Roy Chowdhury	10 <sup>th</sup> to 12 <sup>th</sup> March-15	ICAR
3	HRD programme	HRD programme for KVK personnel	Dr. Biplab Das Dr. Soma Banerjee Dr. Manas Kumar Das	2 <sup>nd</sup> February to 4 <sup>th</sup> February -2015	West Bengal University of Animal & Fishery Sciences

## EXTENSION ACTIVITIES (Contd...)

Technology week celebration. 1 (One): 3 (three) days duration (13th to 15<sup>th</sup> February, 2015)

Type of activities	No. of activities	Number of participants	Related crop/livestock technology
Competitive Exhibition (Agricltural Horticultural – Animal sector), Farmers' Meet, SHGs members meet, Seminar on Advance Technology on crop diversity, resource conservation, protection of plant varieties, farmers' club linkages,	07	4,500 participants	<b>Seminar on :</b> Non conventional vegetable cultivation for nutritional security and crop diversification, Agricultural technologies for natural resource management and Composite fish culture, Prospects of Plantation crops in North Bengal, Role of farmers' Club in technology dissemination Latest technology of the agriculture and horticultural crops



'Chital' and 'Tilapia' farming at Farmer's pond under supervision of North 24 Parganas KVK



Animal Health Camp, North 24 Parganas KVK



Touranme Coordinator, Jalpaiguri KVK at OFT Field





## EXTENSION ACTIVITIES (Contd...)

### List of VIP visitors (MP/MLA/DM/VC/Zila Sabhadipati/Other Head of Organization/Foreigners)

Date	Name of the person	Purpose of visit
15/5/14	Dr. Rajeswar Singh, Vety. Officer, Deptt. of ARD, Jalpaiguri	Delivery a lecture during training programme
15/5/14	Dr. Akas Pal Choudhury District Vety. Officer, Jalpaiguri	Delivery a lecture during training programme
29/5/14	Mr. Debojyoti Bhattacharyee, FEO, Meen Bhawan, Jalpaiguri Mr. Pradip Roy Meen Bhawan, Jalpaiguri	Delivery a lecture during training programme
30/5/14	Mr. Bijan Roy Block Development Office, Maynaguri	
10/7/14	M Sanjeeb Das Assistant Director of Agriculture, Maynaguri Mr. Subhas Bose Sabhapati, Maynaguri Panchayet Samity	Attended a meeting
18/7/14	Mr. Ananta Dev Adhikary MLA, Maynaguri	Visit the developmental work of KVK
25/7/14 to 27/7/14	Dr. Yograj Tamang Additional Director of ARD, North Bengal	Stayed at KVK and follow up the day to day work of pigs during Encephalities
30/7/14	Tarit Kumar Sarkar & staff Office of the CMOH, Jalpaiguri	Follow up the day to day progress of pigs during Encephalities
12/8/14	Mr. Keshab Ch. Sarkar, Production Officer W.B.State Seed Corpn., Jalpaiguri	For Production Programme
29/9/14	Dr. Mendel W. Moktam, Programme Coordinator, Darjeeling KVK, UBKV, Kalimpong	Visit this KVK for coordinating the various programmes
27/1/15	AUIRI AMRUM RAO & BAE JIN SUNG ( South Korea) Raymond Memorial HR Sec. School, Falakata	Visit this KVK for organizing training programme
5/2/15	Dr. Maloy Sarkar Assistant Director of Agriculture Soil Conservation, Jalpaiguri	Visit this KVK on different aspects
13/2/15	Dr. F.H. Rahman, Principal Scientist, ZPD, Zone-II, ICAR, Kolkata	Attending the 14 <sup>th</sup> SAC meeting
13/2/15	Mr. G.C. Biswas, DDM –NABARD, Jalpaiguri	Attending the 14 <sup>th</sup> SAC meeting
11/3/15	Dr. Arun Kr. Sit, Senior Scientist CPCRI, Mohitnagar, Jalpaiguri	
30/03/15	Mr. G.C. Biswas, DDM –NABARD, Jalpaiguri	Attending the one day Kisan Mela
30/03/15	Mrs Sreyoshi Ghosh, BDO, Maynaguri	Attending the one day Kisan Mela

**EXTENSION ACTIVITIES** (Contd...)**Functional linkage with different organizations**

Sl. No.	Name of organization	Nature of linkage
1	AIMA, Deptt. Of Agriculture, Govt. of West Bengal	1. Training, C-DAP preparation 2. Short term research 3. Demonstration
2	NHM, Deptt. Of Horticulture, Govt. of West Bengal	1. Training 2. Demonstration 3. Exposure visit 4. Publishing literature
3	MGNREGS, Jalpaiguri, Govt. of West Bengal	1. Land levelling 2. Drainage 3. New earthen ( Katcha ) road 4. Reshaping of earthen road
4	Department of Forests, Govt. of West Bengal	1. To impart awareness programmes 2. Development of Social Forestry
5.	District Horticulture Officer, Jalpaiguri, Deptt. Of Horticulture, Govt. of West Bengal	Training, Demonstration
6.	Assistant Director of Agriculture, Maynaguri, Deptt. Of Agriculture, Govt. of West Bengal	Agriculture Fair ( Block Krishi Mela ), Training, Demonstration
7.	Assistant Director of Agriculture, Matiali, Deptt. Of Agriculture, Govt. of West Bengal	Training, Demonstration
8.	Nehru Yuva Kendra, Jalpaiguri	Training
9.	NABARD	Project for tribal development programme
10.	Uttar Bangya Krishi Viswavidyalaya, Pundibari, Coochbehar	Technical support, demonstration, training
11.	Central Plantation Crop Research Institute, ICAR, Mohitnagar, Jalpaiguri	Technical support, training
12	Animal Resources Development Department, Govt. of West Bengal, Jalpaiguri	Joint diagnostic and Technical support
13	Backward Classes Welfare Department, Govt. of West Bengal, Jalpaiguri	Training
14	Indian Farmers Fertilizers Co. optv. Ltd., Siliguri , Darjeeling	Training





## EXTENSION ACTIVITIES (Contd...)

### Joint activity carried out with line departments and ATMA

Name of activity	Number of activity	Season	With line department	With ATMA	Both
Preparation of CDAP Jalpaiguri	-		-		Both
Joint field visit with Assistant Director of Agriculture of Malbazar Block and Maynaguri Block	5	Kharif & Rabi	With Line Department	-	-
Training Programme	8	Round the Year	With Line Department	-	-
Exposure Visit	4	Rabi	With Line Department	-	-
Joint Field Visit with the Deputy Director of Agriculture and District Horticultural Officer, Jalpaiguri	1	Rabi	With Line Department	-	-

### SMS PORTAL

No. of messages	No. of calls	No. of farmers covered	Types of messages (No.)					
			Crop	Livestock	Weather	Marketing	Awareness	Other
82	41320	1146	38	21	4	4	8	7

### Observation of National Science day

Date of Observation	Activities undertaken
28 <sup>th</sup> February, 2015 at the Bagjan Pragatishil Farmers' Club yard at Maynaguri.	<ul style="list-style-type: none"> <li>➤ Importance of science on lab to land programme for the farming people</li> <li>➤ Importance of Good Agricultural Practices for natural resources management</li> <li>➤ Importance of farmers friendly agricultural equipments for the low expenses in the farming pattern</li> <li>➤ Importance of Eco-friendly cultivation practices for 'Grow Safe Food'</li> <li>➤ Proper bio security measures for semi intensive farming and small ruminants.</li> <li>➤ Awareness on Swine Flue in this region</li> <li>➤ Quiz competition</li> </ul>

## EXTENSION ACTIVITIES (Contd...)

## Observation of Swachha Bharat Programme

Date of Observation	Activities undertaken
29 <sup>th</sup> September, 2014	<ol style="list-style-type: none"> <li>Information Campaign through awareness camp and rally for cleanliness of: <ul style="list-style-type: none"> <li>➤ Houses of rural community/Farm Houses</li> <li>➤ Cattle Shed, poultry unit</li> <li>➤ Farm or Community pond</li> <li>➤ Cultivated and non cultivated land through recommended practices</li> <li>➤ Cleanliness of soil to maintain soil health</li> <li>➤ Proper training and pruning of homestead plants for better aeration and hygienic of houses</li> <li>➤ Cleaning of rural or local godown</li> <li>➤ Cleaning of implement shed</li> <li>➤ Drinking water at the villages</li> </ul> </li> <li>Educational campaign through demonstration, awareness camp and rally of <ul style="list-style-type: none"> <li>➤ Storage the crop residue for composting</li> <li>➤ Cleanliness in KVK animal houses including poultry unit, piggery unit, sheep unit etc.</li> <li>➤ KVK has organized Farmers' Meet – 2014, Farmers' Day &amp; Field Day where KVK discussed and awareness them regarding the topic</li> <li>➤ Special emphasis on organizing village level programme for a warning the rural people on the topic</li> <li>➤ Special measures for cleanliness of the surroundings of the home, local hut centre, and village roads</li> <li>➤ Sanitation measures taken for the local primary schools, Shishu Shiksha Kendra, High Schools</li> <li>➤ Farmers Club and SHGs members will take the initiation for built up the SWACHH BHARAT programme with the association of the Krishi Vigyan Kendra by wall writing and village level rally</li> <li>➤ Community activities will be used with the PRI system</li> </ul> </li> <li>Communication campaign with the farming community through ICT, awareness camp and rally <ul style="list-style-type: none"> <li>➤ The KVK has sent the SMS Portal alert on this topic to the registered farmers / farmwomen, rural youths and farmers' club members for holistic campaign of SWACHH BHARAT</li> </ul> </li> </ol>





## EXTENSION ACTIVITIES (Contd...)

### Agriculture Knowledge in rural school:

Name and address of school	Date of visit to school	Areas covered	Teaching aids used
Panbari Bhabani Uchehatara Madhyamik Vidyalaya	3.02.2015	Grow Save Food, Green Earth Jalpaiguri 1, Organic Manure, Introduction P.O. Panbari, P.S. Maynaguri, of New Crop and breed	Flex, Leaflets & Demonstration Model

### No. of Progressive/Innovative/Lead farmer identified (category wise)

Block	Category of farmer		
	Progressive	Innovative	Lead
Malbazar	12	2	10
Jalpaiguri Sadar	13	2	12
Dhupguri	11	3	11
Maynaguri	11	3	12
Nagrakata	11	3	11
Matiali	11	1	10
Rajganj	14	1	11
<b>Total:</b>	<b>83</b>	<b>15</b>	<b>77</b>

### Details of outside fund received for the sponsored programme :

SL. No.	Name of Head	Income (Rs.)	Sponsoring agency
1.	Training	1,15,000.00	Nehru Yuva Kendra Sangathan, Jalpaiguri
2.	Technology Week	2,00,000.00	Department of Horticulture, Jalpaiguri
3.	Training	48,000.00	Department of Horticulture, Jalpaiguri
4.	Exposure Visit	45,000.00	Department of Horticulture, Jalpaiguri
5.	Krishi Mela	1,00,000.00	National Bank for Agriculture & Rural Development
6.	Exposure Visit	25,000.00	National Bank for Agriculture & Rural Development
7.	Training & Demonstration	47,000.00	FIAC, Matiali

### IPNI Trial (Applicable for KVKs identified under IPNI trial)

I	Name of Crop	:	Wheat
II	No. of farmers involved	:	8
III	Area (ha.)	:	0.24
IV	Date of sowing	:	2 <sup>nd</sup> of December
V	Crop Season	:	Rabi 2014 - 2015
VI	Result of trial with photographs however detailed results/observation should be sent as per performance after crop harvest		
VII	Amount Spent	:	Rs. 15,000.00

## EXTENSION ACTIVITIES (Contd...)

## Achievement under TSP Project

Name of the village adopted under TSP	Block	Population of the village			ST Population of the village			Percentage of ST population to total population
		M	F	T	M	F	T	
Barohati Uttar	Maynaguri	240	205	445	103	95	198	44%
Barohati Paschim		196	172	368	81	63	144	39%

Asset created under TSP

One 2 HP Pumpset for irrigation to the crop field  
 Spray Machine 2 nos.  
 RIR poultry unit, Demonstration on EFY, Turmeric

**National Initiative on Fodder Technology Demonstration (NIFTD)**  
 (Applicable for KVKs identified under NIFTD)

Name of the fodder crop	Date of sowing	Area (ha)	No. of farmers involved	Demonstration Yield (q/ha) Single Cut			Check Yield			% increase
				H	L	A	H	L	A	
Sorghum	2 <sup>nd</sup> week of June-14	0.6	9			72.00				
Cowpea		0.6	9			48.00				
Dinanath		0.25	9			148.00				
Ricebeam		0.6	9			62.00				
Maize		0.6	5			215.00				
Hybrid Napier		0.25	3			170.00				
Oat	2 <sup>nd</sup> week of December-15	0.25	3			In the field				

## Awarded/ Felicited Farmers from the KVK district

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1	Limca Book of Records	Sri Sumanta Mishra	2015	Limca Book of Records	Certificate	Conservation and Development of Mango & Pointed gourd
2	Felicited	Sri Sumanta Mishra	2014	At CIFRI, Barrackpur on 27 <sup>th</sup> June, 2014 at ICAR RCM-II	Memento & Certificate	He has been engaged in conservation and development of chilli, lime
3	Recognized	Sri Dinesh Biswas	2015	UBKV, Pundibari, Coochbehar	Memento & Certificate	Nursery



## Achievements of Frontline Demonstrations

Details of FLDs implemented during 2014-15

Sl. No.	Crop	Thematic area	Technology Demonstrated with detailed treatments	Area (ha)		No. of farmers/ demonstration		
				Proposed	Actual	SC/ST	Others	Total
1	Rice	INM	Zinc application in Kharif rice to increase yield	5.0	5.0	8	4	12
2	Broccoli	Exotic vegetable	Popularization of broccoli as non conventional vegetable	0.5	0.5	11	3	14
3	Red Cabbage	Exotic vegetable	Popularization of red cabbage as non conventional vegetable	0.5	0.5	12	4	16
4	Summer Squash	Exotic vegetable	Popularization of summer squash in cucurbits vegetable area	0.5	0.5	13	4	17
5	Turmeric	Production and management technology	Improved cultivation technique of turmeric	1.0	1.0	15	4	19
6	Colocasia	Crop diversification	Introduction and popularization of colocasia in forest village	1.0	1.0	21	-	21
7	Gladiolas	Crop diversification	Improved cultivation technique of gladiolus	0.5	0.5	4	2	6
8	Kitchen gardening	Household food security	Kitchen gardening for livelihood and nutritional security	0.5	0.5	11	7	18
9	Handicraft	Value addition	Popularization of jute product for entrepreneurship development among SHG	15	15	15	5	20
10	Poultry	Poultry Management	Introduction of RIR breed for backyard poultry	-	-	12	6	18
11	Mineral Mixture	Feed management	Introduction of mineral supplement in cross breed dairy cows	-	-	6	4	10
12	Azolla	Production and management technology	Feeding of Azolla in animal farming for multipurpose uses	-	-	6	4	10

## EXTENSION ACTIVITIES (Contd...)

## Technical Feedback on the demonstrated technologies

Sl. No	Crop	Feed Back
1.	Rice	Due to soil acidity several micronutrients are deficient in the soil causing severe loss in yield of crops. Application of micronutrients either in the soil or as foliar spray in different crops to mitigate the problem.
2.	Broccoli	As a nonconventional vegetable crops needs to more awareness among common peoples for its nutritional values and package and practices for better cultivation.
3.	Red cabbage	As a nonconventional vegetable crops needs to more awareness among common peoples for its nutritional values and package and practices for better cultivation.
4.	Summer squash	As a nonconventional vegetable crops needs to more awareness among common peoples for its nutritional values and package & practices for better cultivation.
5.	Turmeric	As a tuber crops most popular in forest fringe areas and low fertility up land areas.
6.	Colocasia	As a tuber crops most popular in forest fringe areas and low fertility up land areas. It is popular in Tribal belt also.
7.	Gladiolus	Flower like gladiolus as crop diversity is economically beneficial because of its high productivity, adoptability and also market demand in town areas.
8.	Kitchen gardening	Keeping in mind the nutritional management of farm families, Nutritional garden were prepared and well taken by farm women to combat malnutrition among children.
9.	Handicraft	To get better income SHG members can engaged jute based handicraft. A proper market chain is required for better marketing round the year.
10.	Poultry	Rearing of RIR as a backyard poultry farming is economically beneficial because of its high productivity, adoptability and also market demand.
11.	Mineral	Mixture Awareness will require regarding animal feed at different block in the Jalpaiguri district.
12.	Azolla	Farmers are willing to know how to use the azolla properly for their better feeding of animals

## Extension and Training activities under FLD

SL. No.	Activity	Date	No. of activities organized	Number of participants	Remarks
1.	Field days	22/4/14, 28/2/15, 20/3/15	8	304	
2.	Farmers Training	5/5/14, 3/6/14, 8/8/14, 2/9/14, 17/9/14, 27/10/14, 24/11/14, 28/11/14, 22/1/15, 27/2/15, 25/3/15,	11	352	
3.	Media coverage	-	4	-	
4.	Training for extension functionaries	15/7/14, 17/9/14, 9/1/15, 30/3/15	104		





## EXTENSION ACTIVITIES (Contd...)



Inauguration of Technology Week by Hon'ble Vice-Chancellor in presence of Hon'ble MLA at North 24 Parganas KVK



Inauguration of Technology week, 2015 and Krishi Mela by Hon'ble Vice-Chancellor in presence of Hon'ble MLA, DREF, Registrar and DDM at North 24 Parganas KVK.

### F.8.2. KRISHI VIGYAN KENDRA, NORTH 24 PARGANAS

Since its inception in July, 2005, the North 24 Parganas Krishi Vigyan Kendra, Ashokenagar, is committed to the identification and satisfaction of the technological needs of the farming community of this district. The activities of this KVK mainly centre on its aim and objectives keeping the mandates in view. It is working in the fields of research, extension and development (RE&D) in agriculture and allied sectors like animal husbandry, fishery and women empowerment. To achieve a sustainable production system and improve the socioeconomic status of the farmers, it is focusing on natural resource management i.e. soil health, water conservation and environment management practices through introduction of improved varieties/HYVs of major crops, improved livestock, poultry birds and their sustainable productivity improvement practice, promotion of improved orchard and high value horticultural crops in the upland area, scientific livestock and poultry farming practices for increasing productivity and better livelihood security of rural stakeholders, scientific composite fish culture practices, promotion of indigenous, endangered fish and production and supply of quality seeds and planting materials of major crops for availability of standard inputs.

In the recent few years this KVK has worked in different blocks covering 30 villages. During the year 2014-15, the KVK has conducted 6 nos. of On Farm Trails (OFT), 8 nos. of demonstration covering 201 nos. of beneficiaries. Moreover, 61 training programs covering 2006 nos. of participants and 2115 nos. of different extension activities has been followed up with 6512 farmers throughout the year. Total 317 quintal seed and 4000 nos. of planting material has been produced and supplied or marketed in the last year.

#### Achievements of Technologies:

1. In the irrigated medium land situation of the district, application of Boron as micronutrient resulted maximum number of harvestable fruit and quality yield of Papaya with a B:C of 2.55:1.
2. A new yellow mosaic virus resistant Okra variety –Sonal (NUN-1142) has been proved to maximise the infestation with a B:C of 2.13:1.
3. Frequency of lime application (half before stocking of fish and half in equal monthly instalment based on calculation) provided best result with a B:C of 4.12:1.
4. By field level demonstration the following technologies has been successfully initiated in farmer's field.

## EXTENSION ACTIVITIES (Contd...)

- a. Banana bunch covering by 20% perforated polythene.
- b. Coconut root feeding if insecticide.
- c. Area specific mineral mixture (UAFSMIN-P) supplementation in cattle.
- d. Rearing of Banaraja Birds as a replacement of desi poultry.
- e. Farming of Desi magur in composite fish farming.
- f. Farming of Clital fish with Tilapia.

### Tribal sub plan:

For the tribal sub plan programme two villages have been adopted, one is Makaltala (Situated in Habra-I block) and another one is Tipligheri (situated in Sandeshkhali-II block). Banaraja birds as backyard poultry, Seed bin for seed storage, sprayer, Black Bengal goat rearing and Garol sheep rearing programme are some of the main components considered for upliftment of livelihood.

### Training Achievements:

1. Total 55 (On-24, Off-31) nos. of trainings of farmers and farm women has been conducted covering 1811 participants in which 264 SC, 231 ST, total 1473 male and 338 female participants were present.
2. 6 nos. of Rural Youth training had been conducted covering 156 male and 39 female participants.
3. 1 On campus training for extension personnel (Fishery extension officer) has been also done with 17 participants.
4. Two numbers of Coconut Development Board sponsored training "Friends of Coconut Tree", PPVFRA sponsored training programme and one NFDB sponsored training "Reaching Fish Farmers with advanced technology" programme has been done successfully.

### Extension Achievements:

- (1) 28 nos. of Field days, 2 nos. of Kisan Mela, 345 nos. of diagnostic service, 2 nos. of Clinic days, vaccination camp etc. mandated extension activities has been done. Total 2115 extension activities done for the direct benefit of 6512 farmers.
- (2) 8 nos. of extension literature (Namely *Dhaner sushanghato sasya surakshar upay*, *Matir sasthya surakshya*, *Sankar dhan*, *Pat pochano pukure macher chas*, *Desi magur macher chas*, *Banaraja murgi palon-gramin bikasher natun sambhabona*, *Has-Murgir kichu tikaprodan somoysima o kichu proyojonio osudh*) has been published and circulated. 5 Radio talks and 10 TV talks has been broadcasted.
- (3) One proceedings has been published on the theme of "Adoption of technology for sustainable farming through 3Rs (Recharge, Reuse and Recycle) in the Programme of Technology week, 2015.
- (4) Two farmers club has been formed. One is Nabadiganta Farmers Club in Iswarigacha village under Habra-II block and another one is *Gulda Sabuj Farmers Club* in Galda village unde Swarnapnagar block

### Seed Village Programme:

In participatory approach with ATMA 297qt certified seed (variety- *Pratiksha*) of paddy has been yielded in Janaphul village under Habra-I block and with an income generation of about Rs. 28,000/-. This seed has been supplied to West Bengal State Seed Corporation.

### KVK Farm and Poly-house Activities:

In the year 2014-15, KVK produce different seeds namely paddy (var. *Satabdi*, *Ratna*, *Heera*) aromatic rice like Gobinobhog, Radha Tilak, Tulapanji, Radhunipagol etc, oil seeds (sesame var. *Roma*, sunflower), turmeric var. Saguna, Elephant Footyam var. Bidhan Kusum and planting materials (capsicum, chilli, cherry tomato, cabbage, cauliflower etc.) in KVK Farm and Poly-house, respectively.





## EXTENSION ACTIVITIES (Contd...)

The newly established office of this KVK at its present location is currently catering to the training needs of the farmers ultimately leading to the remarkable progress in the rural agrarian economy.

### F.8.3. KRISHI VIGYAN KENDRA, MURSHIDABAD

During 2014-15 several conventional programs were undertaken by the KVK as described below :

#### 1. Technical achievements and achievement of mandatory activities by KVK:

OFT				FLD			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
8	7	59	52	8	15	105	243

Training				Extension activities			
Number of Courses		Number of Participants		Number of activities		Number of participants	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
106	106	3100	3351	1344	1203	16950	14837

#### 2. Collaborative activities of KVK:

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
All India Coordinated Research Project on Bengal Goat (AICRP-Goat)	1. To promote conservation & improvement of black Bengal goats in villages surrounding the KVK, Murshidabad 2.To establish buck raising centre in KVK, Murshidabad 3.To provide a formal basis for initiating interaction & research collaboration AICRP on goat, WBUAFS & KVK, Murshidabad	July 2014	AICRP	No fund allotted for KVK, Murshidabad, only monitor the adoptive villages by KVK expert
Technology development & transfer for promotion for Horticulture	Custom hiring	March 2015	NHB	1125000.00
Social fisheries	Fish fingerling production of IMC	March 2015	State Govt.	Provided fingerling 15000 pcs as fund

## EXTENSION ACTIVITIES (Contd...)

### 3. Abstract of sponsored training programme with financial assistance:

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Kishan Mela	For development of KVK activities Linkage with different Farmers	30.03.15	ICAR	100000.00
Krishi mela cum Technology week	For development of KVK activities Linkage with different Farmers	Dec'2014, Jan'2015	NABARD	300000.00
Friends of Coconut Tree (FOCT)	Training for farmers	Aug, Nov &	CDB Dec'2014	190000.00
Nehru Yuba Kendra (NYK)	Training of ex-volunteers	Aug & Sep'2014	NYK	147564.00
Protection of Plant Varieties and Farmers' Right (PPV&FR)	Awareness cum training programme	Feb'2015	PPV&FRA	80000.00
Tribal Sub-Plan (TSP)	To improve the socio-economic livelihood of Tribal people	Jan'2015	ICAR	320000.00



Extension literature developed by KVK for disseminating information to farmers

Some extension literature published by Murshidabad KVK



Green Fodder Jai Ghos (Om) plot at Murshidabad KVK



Application of polypropylene branch cover in banana farming, Murshidabad KVK





## EXTENSION ACTIVITIES (Contd...)

### 4. Observation of Swachh Bharat Programme:

KVK started campaigning throughout district regarding Swachh Bharat to make our country clean and green. In this aspect KVK conducted different training programme involving different farmers from the district and also conducted different "Safai Abhijan" in KVK and in surrounding villages.

### 5. Observation of National Science day:

Date of Observation	Activities undertaken
28.02.2015	Training & film show on scientific livestock cum agricultural farming; Quiz contest among the trainees participated in the programme;

### 6. Green Fodder Cultivation (OATS/Jai Grass):

One of the popular green fodders cultivated in the KVK as well as surrounding area is Oats (*Avena sativa*), which is locally known as **Jai Grass**. The varieties that are cultivated in this area are JHO-99-2, OS-6, Kent, UPO 212, UPO 94 etc. Two or three irrigations are to be required to get good yields. Generally, irrigation is mandatory immediately after each cutting. Seventy to eighty days are needed for maturity of the grass and the common practice is to get fodder after the first cutting. It is used as fodder from the first cutting onwards. The yield of green fodder is approximately 30-37 t/ha. Thrust is given on sowing this grass to meet the green fodder requirement for the livestock of the area especially for Black Bengal Goats and cattle. A front-line demonstration has been taken up for popularizing this fodder amongst the livestock raisers of the area under the jurisdiction of Murshidabad KVK.

### 7. Achievement under TSP Project:

KVK started special programme on Tribal Sub-Plan where different training programme, front line demonstration and different agricultural inputs has been provided to Tribal people of few selected villages where the population of Tribal is near about 30% of that particular village. KVK has adopted three Tribal villages initially to start the work in this year.

Name of the village adopted under TSP	Block	Population of the village			ST Population of the village			Percentage of ST population to total population
		M	F	T	M	F	T	
Kusumkhola	MJ	810	870	1680	387	443	830	49.41%
Chandpur	MJ	149	138	287	149	138	287	100%
Dahapara	MJ	4659	4341	9000	2468	2532	5000	55.56%

**EXTENSION ACTIVITIES** (Contd...)**8. Award received by Farmers from the KVK district:**

Moinuddin Sk. is a progressive farmer of adoptive village of KVK. He received Krishak Ratna Award from Govt. of WB and he also got National Krishi Samrat Samman award from Mahindra Samriddhi in 2015.

Sl No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1	National Krishi Samrat Samman	Moinuddin Sk	2014-15	Mahindra Samriddhi	211000.00	Red Cabbage

**9. Extension Activities (including activities of FLD programmes):**

Nature of Extension Activity	No. of Activities	Farmers Officials			Extension			Total		
		M	F	T	M	F	T	M	F	T
Field Day	4	90	6	96				90	6	96
Kisan Mela	3	3191	2275	5466				3191	2275	5466
Technology Week Cum	5	1544	312	1856				1544	312	1856
Krishi Mela										
Workshop	7									
Lectures delivered as resource persons	49									1601
Newspaper coverage	5									
Extension Literature	87									2372
Scientific visit to farmers field	78	1072	113	1185				1072	113	1185
Radio talks	7									
Farmers visit to KVK	929	839	90	929				839	90	929
Diagnostic visits	1	49	0	49				49	0	49
Vaccination camp	8	619	13	632				619	13	632
Farm Science Club Conveners meet	3	163	12	175				163	12	175





## EXTENSION ACTIVITIES (Contd...)

Celebration of important days :								
1. 15 <sup>th</sup> August								
2. World Veterinary day (26.01.2014)	4	82	52	134		82	52	134
3. 26th Jan.,2015								
4. National Science Day (28.02.2015)								
Any Other program								
1. Exposure Visit in different villages of different block	14	309	33	342		309	33	342
2. 8th SAC Programme								
<b>Total</b>	<b>1203</b>	<b>7958</b>	<b>2906</b>	<b>10864</b>		<b>7958</b>	<b>2906</b>	<b>14837</b>

## TRANSFERABLE TECHNOLOGIES DEVELOPED

Certain useful technologies have been generated / evolved through various research programmes undertaken in the three faculties and the Directorate of Research, Extension & Farms of the University. The technologies, so developed are awaited to be distributed which might be of great help to the State farmers in the enhancement of their income and livelihood. These technologies may also be applicable to the other regions of the country through proper refinement, thus in turn benefiting the vast farming community of the nation. The technologies developed during the researches of 2014-15 are as follows :

1. Area-based Mineral Mixture, WBUAFS – P, branded and regularly marketed in different districts of the state.
2. Bio-security strategy of backyard poultry developed by Dr. Indranil Samanta and Dr. S. N. Joardar from Dept. of Vety. Microbiology, Faculty of Veterinary & Animal Sciences.
3. “Kara Buffalo” a draught buffalo breed in Birbhum district of West Bengal was characterized and documented for the first time by Dr. Aruna Pal, Assistant Professor (Animal Genetics and Breeding), Dept. of ILFC
4. Antibody detection ELISA technique for early diagnosis of caprine oesophagostomosis developed by Prof. J.D. Ghosh, P.I.&Dr. Ruma Jas, Co-P.I. of “AINP on G.I. Parasitism”
5. Copro-antigen detection ELISA for early diagnosis of caprine oesophagostomosis developed by Prof. J.D. Ghosh, P.I.&Dr. Ruma Jas, Co-P.I. of “AINP on G.I. Parasitism”
6. Productivity enhancement in goat and sheep by tactical use of anthelmintic medication developed by Prof. J.D. Ghosh, P.I.&Dr. Ruma Jas, Co-P.I. of “AINP on G.I. Parasitism”

## EXTENSION ACTIVITIES (Contd...)

7. Bioclimatograph as a tool for forecasting economically significant level of gastrointestinal parasitism in ruminant livestock developed by Prof. J.D. Ghosh, P.I.&Dr. Ruma Jas, Co-P.I. of "AINP on G.I. Parasitism"
8. Anticoccidial potential of the biomolecules of a marine snail developed by Prof. J.D. Ghosh, Professor of Vety. Parasitology
9. Dipstick ELISA kit for detection of anti-aeromonas antibodies in fish (Indian major carp) developed by Dept. of Vety. Microbiology, Faculty of Veterinary & Animal Sciences.
10. Dipstick ELISA kit for detection of anti-bluetongue antibodies in ruminants Dept. of Vety. Microbiology, Faculty of Veterinary & Animal Sciences.
11. Dipstick ELISA kit for detection of anti-ND antibodies in poultry Dept. of Vety. Microbiology, Faculty of Veterinary & Animal Sciences.
12. Development of lithium and strontium doped bioactive glass for application in animal vis-a-vis human orthopaedic patients by Dr. Samit Kr Nandi, Dept. of Vety. Surgery & Radiology, WBUAFS and Dr. Biswanath Kundu, Scientist, CSIR-CGCRI, Kolkata.
13. Development of animal cartilage for application in human rhinoplasty and microtia condition in collaboration with R. G. Kar Medical College and hospital, Kolkata by Dr. Samit Kr Nandi, Dr S. Joarder, Dr B K Biswas and others of WBUAFS.
14. "Pirfenidone formulations for use in eye diseases" developed by Dr Sarbani Hazra, Dept. of Vety. Surgery & Radiology, WBUAFS, Prof UB Kompella and Ruchit Trivedi. Indian Patent has been filed vide 232/KOL/2013.
15. "Fabrication of silk protein film from Indian tropical tasar silk *Antheraea mylitta* for use as corneal scaffold" developed by Dr Sarbani Hazra, Dept. of Vety. Surgery & Radiology, WBUAFS, and Prof S C Kundu. . Indian Patent has been filed.
16. Climate Resilient Species combinations for the salinity intrusion zone of Sundarban – developed by Prof. Raman Kumar Trivedi, Dr. Sangram Keshari Rout and Dr. Bimal Kinkar Chand jointly from Faculty of Fishery Sciences and DREF.
17. Climate adaptive integrated farming developed by Prof. Raman Kumar Trivedi, Dr. Sangram Keshari Rout and Dr. Bimal Kinkar Chand jointly from Faculty of Fishery Sciences and DREF.
18. Ready to cook vacuum pack products developed by AICRP on PHT, Faculty of Fishery Sciences.
19. Ready to cook Nitrogen pack products developed by AICRP on PHT, Faculty of Fishery Sciences.
20. Development of fish snacks using surmi powder prepared from tilapia developed by Department of Fish Processing Technology, Faculty of Fishery Sciences.
21. Innovative embankment design for erosion prone islands of Indian Sundarban developed by GIZ funded Pilot project on CCA RAI which is going through pilot testing phase by Department of Environment, Govt. of West Bengal.





# PUBLICATION ON RESEARCH FINDINGS



## G.1. RESEARCH PUBLICATIONS OF FACULTY OF VETERINARY & ANIMAL SCIENCES

### G.1.1. Department of Animal Genetics and Breeding

Sl. No.	Scientific Research Publication in Journals
1.	Ahlawat S, Sharma R, Maitra A, Roy M and Tantia M S (2014): Designing, optimization and validation of tetra-primer ARMS PCR protocol for genotyping mutations in caprine <i>Fec</i> genes. <i>Meta Gene</i> 2(2014):439-449. NAAS rating : 8.80
2.	Ahlawat S, Sharma R, Maitra A, Tantia M S, Roy M and Mandakmale S (2014): New genetic polymorphisms in Indian goat BMPR1B gene. <i>Indian Journal of Animal Science</i> 84(1): 39-44. NAAS rating : 6.00
3.	Maitra A, Sharma R, Ahlawat S, Tantia MS, Roy M and Ved Prakash (2014): Association analysis of polymorphisms in caprine <i>KiSS1</i> gene with reproductive traits. <i>Animal Reproduction Science</i> 151: 71-77. NAAS rating : 7.58
4.	Roy M, Senapati P K, Pakhira M C, Roy S, Nandi D (2014): Haemoglobin phenovariants vs resilience status, haematological, biochemical and mineral profile in Garole sheep naturally infected with <i>Haemonchus contortus</i> . <i>Explor. Anim Med Res</i> 4(2): 217-227. NAAS rating : 3.30
5.	Sharma R, Maitra A, Ahlawat S, Roy M, Mandakmale S and Tantia MS (2015): Identification of novel SNPs in INHBB gene of Indian goat. <i>Indian Journal of Animal Sciences</i> 85(1): 55-59. NAAS rating : 6.00
6.	Samanta I., Joardar S. N., Das P.K. , Sar T. K., Bandyopadhyay S., Dutta T. K., and Sarkar U. Prevalence and antibiotic resistance profiles of <i>Salmonella</i> serotypes isolated from backyard poultry flocks in West Bengal, India. 2014. <i>J. Appl. Poult. Res.</i> , 23: 1-10. NAAS rating : 6.59
7.	Jeevan Ranjan Dash, Tapas Kumar Sar, Indranil Samanta <sup>1</sup> , Subodh Pal, Madhuchhanda Khan, Nimai Chand Patra, Uttam Sarkar, Asit Kumar Maji, Tapan Kumar Mandal. Efficacy evaluation of <i>Bauhinia variegata</i> L. stem bark powder as adjunct therapy in chronic <i>Staphylococcus aureus</i> mastitis in goat. 2014. <i>Pharmacognosy Magazine</i> , 10(39): 512-518. NAAS rating : 7.11
8.	Samanta, I. , Joardar, S. N. , Ganguli D., Das P.K. , and Sarkar U. Evaluation of egg Production after adoption of Biosecurity strategies by backyard poultry farmers in West Bengal. 2015. <i>Veterinary World</i> , 8(2):177-182. NAAS rating : 5.10
9.	Sarkar B., Ray K. and Sarkar U.*. Prevalence of uterine infection in relation to haematological as well as biochemical changes of blood serum in dairy cows. 2015. <i>Indian Journal Animal Research</i> (Communicated). NAAS rating : 6.03

### G.1.2. Department of Animal Nutrition

Sl. No.	Scientific Research Publication in Journals
1.	G.P.Mandal, T.K.Ghosh, and A.K.Patra(2014) Effect of Different Dietary n-6 to n-3 Fatty Acid Ratios on the Performance and Fatty Acid Composition in Muscles of Broiler Chickens: <i>Asian Australas.J.Anim.Sci.</i> Vol.27, No 11: 1608 – 1614 November 2014.
2.	Abhay Kumar Singh, Tapan Kumar Ghosh, Sudipto Haldar (2015) Effect of ethionine chelate or yeast Proteinase-Based Supplement of Copper, Iron, Manganese and Zinc on Broiler Growth Performance, Their Distribution in the Tibia and Excretion into the Environment: <i>Biol Trace Elem Res.</i> DOI 10.1007/s 12011-014-0222-2.
3.	Patra, A.K. and Z.Yu, 2014. Combinations of nitrate, saponin, and sulfate additively reduce methane production by rumen cultures in vitro while not adversely affecting feed digestion, fermentation or microbial communities. <i>Bioresource Technology</i> , 155: 129-135.

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

4.	Patra, A.K., 2014. A meta-analysis of the effect of dietary fat on enteric methane production, digestibility and rumen fermentation in sheep, and a comparison of these responses between cattle and sheep. <i>Livestock Science</i> , 162: 97-103.
5.	Mondal, G.P., A. Roy and A.K. Patra, 2014. Effects of feeding plant additives rich in saponins and essential oils on the performance, carcass traits and conjugated linoleic acid concentrations in muscle and adipose tissues of Black Bengal goats. <i>Animal Feed Science and Technology</i> , 197: 76-84.
6.	Patra, A.K., 2014. Prediction of enteric methane emission from buffaloes using statistical models. <i>Agriculture Ecosystems and Environment</i> , 195: 139- 148.
7.	Lalhriatpuii, M., G. Samanta and A.K. Patra, 2014. Effects of different alternative growth promoters on the performance and intestinal health of Khaki Campbell ducks. <i>Indian Journal of Animal Nutrition</i> , 31: 86-91.
8.	Chatterjee, P.N., D.N. Kamra, N. Agrawal and A.K. Patra, 2014. Influence of supplementation of tropical plant feed additives on in vitro rumen fermentation and methanogenesis. <i>Animal Production Science</i> , 54, 1770-1774.
9.	Pattanaik, S., S. Batabyal and A.K. Patra, 2014. A study on effect of age, breed and sex on the relation of blood sugar level of dogs. <i>Exploratory Animal and Medical Research</i> , 4: 33-43.
10.	Mandal, G.P., T.K. Ghosh and A.K. Patra, 2014. Effect of different dietary n-6 to n-3 fatty acid ratios on the performance and fatty acid composition in muscles of broiler chickens . <i>Asian-Australasian Journal of Animal Sciences</i> 27: 1608-1617.
11.	Pal, K., A.K. Patra, A. Sahoo and G.P. Mandal, 2014. Effect of nitrate and fumarate in <i>Prosopis cineraria</i> and <i>Ailanthus excelsa</i> leaves-based diets on methane production and rumen fermentation. <i>Small Ruminant Research</i> , 121: 168-174.
12.	Pal, K., A.K. Patra, A.B. Sahoo and N.M. Soren, 2014. Effects of nitrate and fumarate in a tree leaves-based diet on nutrient utilization, rumen fermentation, microbial protein supply and blood profiles in sheep. <i>Livestock Science</i> , 172: 5-15.
13.	Kar, I., S.K. Mukhopadhyay, A.K. Patra, S. Pradhan, 2015. Heavy metals concentrations and histopathological changes in goats ( <i>Capra hircus</i> ) reared near an industrial area of West Bengal, India. <i>Archives of Environmental Contamination and Toxicology</i> , DOI 10.1007/s00244-015-0130-2.
14.	Patra, A.K. and Z. Yu, 2015. Essential oils affect populations of some rumen bacteria in vitro as revealed by microarray (RumenBactArray) analysis. <i>Frontiers in Microbiology</i> , 6:297. doi: 10.3389/fmicb.2015.00297
15.	Patra, A.K., and Z. Yu, 2015. Effects of garlic oil, nitrate, saponin and their combinations supplemented to different substrates on in vitro fermentation, ruminal methanogenesis, and abundance and diversity of microbial populations. <i>Journal of Applied Microbiology</i> , doi: 10.1111/jam.12819
16.	Naskar, S., Mandal, G.P., Borah, S., Vashi, Y., Thomas, R. and Dhara, S.K. 2014. Evaluation of fatty acid profile in subcutaneous adipose tissue of indigenous and crossbred pigs. <i>Indian Journal of Animal Science</i> , 84: 88-90. NAAS rating : 6.13
17.	Roy, A., Mandal, G.P., Pal, K., Samanta, I., Biswas, P. and Roy, B. 2014. Effect of zinc supplementation with or without phytase on performance, mineral accumulation in tissues and immune response of broiler. <i>Animal Nutrition and Feed Technology</i> , 14: 311-319. NAAS rating : 6.36
18.	Mandal, G.P., Ghosh, T.K. and Patra, A.K. 2014. Effect of different dietary n-6 to n-3 fatty acid ratios on the performance and fatty acid composition in muscles of broiler chickens. <i>Asian Australasian Journal of Animal Science</i> , 27. 1608-1614. NAAS rating : 6.64





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

19.	Pal, K., Patra, A.K., Sahoo, A. and Mandal, G.P. 2014. Effect of nitrate and fumarate in <i>prosopis cineraria</i> and <i>Ailanthus excels</i> leaves-based diet on methane production and rumen fermentation. <i>Small Ruminant Research</i> , 121: 168-174. NAAS rating: 7.12
20.	Mandal, G.P., Roy, A. and Patra, A.K. 2014. Effects of feeding plant additives rich in saponins and essential oil on the performance, carcass traits and conjugated linoleic acid concentrations in muscle and adipose tissue of black Bengal goats. <i>Animal Feed Science and Technology</i> , 197: 76-84. NAAS rating: 7.61.
21.	Chatterjee, P.N., Kamra, D.N., Agarwal, N. and Patra A.K. 2014 Influence of Supplementation of Tropical Plant Feed Additives on invitro rumen fermentation and methanogenesis. <i>Animal Production Science</i> , 54(10):1770- 1774. NAAS rating : 7.22

### G.1.3. Department of Instructional Livestock Farm Complex

Sl. No.	Scientific Research Publication in Journals
1.	Ray, M.; Roy, D.C.; Haldar, P.; Choudhury, N.B. and Sahoo, P.K. 2014. On-Farm Evaluation of Various Rice ( <i>Oryza sativa</i> ) Based Cropping Systems to Improve Profitability and Resource Use Efficiency in Coastal Saline Zone of West Bengal. <i>Ind. J. Ecology</i> 41(2): 228-233. NAAS rating : 4.47
2.	Ray, M.; Roy, D.C. and Nandi, A.K. 2014 Crop sequences vis-a-vis irrigation water related problems and mitigation: an overview of West Bengal emphasizing alluvial zone <i>Indian Groundwater</i> 3:61-70
3.	Roy, D.C. and Tudu, N.K. 2015. On Farm Evaluation of Yield and Quality of Multicut Sorghum ( <i>Sorghum bicolor</i> ) Fodder Through Application of Phosphorus. <i>Ind. J. Sci. Res.</i> 4(1): 2825-2828
4.	Roy D.C., Tudu, N.K., Ray, M., Pakhira, M.C. and Das, H. 2015. Effect of phosphorus on yield and quality of multi cut Sorghum ( <i>sorghum bicolor</i> ) fodder in the New Gangetic flood plains of West Bengal <i>Int J Bio-res Env Agril Sci</i> 1(1): 13-20
5.	Roy D.C., Das, H., Pakhira, M.C. and Bera S. 2015. Growth, green forage yield and quality of Sorghum ( <i>Sorghum bicolor</i> ) fodder as influenced by application of Phosphorus fertilizer. <i>Trend in Biosciences Journal</i> 8(7): 1712-1718. NAAS rating : 2.74
6.	Kundu, C. K.; Das, Himangshu; Roy, D. C.; Bandopadhyay, Pintoo and Bandyopadhyay, S.. 2015 Effect of Different Levels of Phosphorus on Yield and Quality of Fodder Ricebean - <i>Trend in Biosciences Journal</i> 8(1): 64-67. NAAS rating : 2.74
7.	Tudu, N.K.; Roy, D.C. and Goswami, K.K. 2015. Socio-Economic Profile of Tribal Poultry Farmers in Nadia District of West Bengal. <i>Global Journal for Research Analysis</i> . 4(2): 8-10.
8.	Tudu N.K., Pyne, S.K., Goswami, K. K., Ghosh, N. and Roy, D.C. 2015. Socio-economic status of pig farmers in Nadia district of West Bengal. <i>Int. J. Bio-res. Env. Agril. Sci.</i> 1(1): 1-4.
9.	Tudu, Nirmal Kumar and Roy, D.C. 2015 Socio-economic profile of women goat keepers and rearing challenges in goat in Nadia district of West Bengal. <i>International Journal of Science, Environment and Technology</i> , 4(2):331- 336.
10.	Tudu, N.K. and Roy, D. C. 2015 Demographic profile and management practices of dairy farmers in Nadia district of West Bengal. <i>International Journal of Information Research and Review</i> 2( 03): 521-524.
11.	Tudu, N K and Roy, D. C. 2015. Participation of women in decision making in goat rearing in Nadia district of West Bengal. <i>Int. J. Soc. Sci. Manage.</i> 2(2): 119-122.
12.	Roy, M; Senapati, P.K; Pakhira, M.C; Nandi, D (2014). Haemoglobin phenovariants Vs resilience status, haematological, biochemical and mineral profile in garole sheep naturally infected with haemonchus contortus. <i>Explor Anim. Med Res.</i> 4:217-227. NAAS rating : 3.30.

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

## G.1.4. Department of Livestock Production Management

Sl. No.	Scientific Research Publication in Journals
1.	Roy, D. C.; Das, H; Pakhira, M. C. and Bera, S. (2015) Growth, Green Forage Yield and Quality of Sorghum ( <i>Sorghum bicolor</i> ) Fodder as Influenced by Application of Phosphorus Fertilizer. <i>Trends in Biosciences</i> 8(7), 1712-1718. NAAS rating : 2.74.

## G.1.5. Department of Livestock Products Technology

Sl. No.	Scientific Research Publication in Journals
1.	Das S.K., Prabhakaran P., Tanwar V.K., Biswas S. (2014) : Effect of some plant starches and carrageenan as fat substitutes in chicken patties. <i>Journal of Animal Science</i> doi:10.2527/jas.2013-6667. NAAS rating : 7.92.
2.	S.K. Das, S. Biswas & P.K. Mandal. (2014). Standardization, Characterization and Storage Stability of Chevon Pithe: A Traditional Indian Meat Cake. <i>International Journal of Meat Science</i> . Volume 4, Number 1, 1-14.
3.	Rajesh Kumar, S.Biswas, D.Bhattacharyya, G.Patra, A.Maurya,P. Thulsiraman. A comparative study on sensory quality of sausage prepared from spent duck and spent hen meat. <i>Indian Journal of Animal Health</i> .53 (1): 15-20. NAAS rating : 2.08.
4.	Subhasish Biswas, Gopal Patra and Jayashree Sheet. Evaluation of Sarcocyst infested bovine carcasses. <i>Indian Journal of Animal Health</i> 53(1): 21-26. NAAS rating : 2.08.
5.	A.Chakraborty, S. Biswas, R. Chakraborty, A. Dhargupta (Chakraborty), D. Majumder.(2014). Proximate, minerals, heavy metal and pesticide composition of three popular cut-up parts of commercial chicken. <i>Journal of Meat science</i> .JMS (2014), 9(2): 52-55. NAAS rating : 3.53.
6.	P.K.Das, P.R.Ghosh, S.Biswas, A.Goswami, D.Mazumder. (2014). Market Potentiality of Backyard poultry rearing system in West Bengal. <i>Int.J.Agricult.Stat.Sci</i> . Vol. 10 Supplement 1 pp 53-58. NAAS rating : 5.00
7.	A.Chakraborty, S. Biswas, R. Chakraborty, A. Dhargupta (Chakraborty), D. Majumder.(2014). Carcass Characteristics and Physiological Status of Nutrients Including Heavy Metal and Pesticide Residues in Selected Beef Cut-Up Parts Of Indian Zebu Cattle. <i>Journal of Meat science</i> , JMS (2014) 9(2): 44-51. NAAS rating : 3.53.

## G.1.6. Department of Teaching Veterinary Clinical Complex

Sl. No.	Scientific Research Publication in Journals
1.	Chakraborty, D, Nath, A.K, Ghosh, D. (2014). Surgical treatment of Bilateral gravid uterus prolapsed in a female dog- a case report. <i>International J Agro Vet. Med Sc</i> . 6(3). Impact factor 1.84. NAAS rating : 6.6.
2.	Ghosh, D and Sarkar, C. (2014). Diagnosis and management of carotid artery stenosis in Dog. <i>Indian J. Canine Practice</i> . 5(1). NAAS rating : 2.9.
3.	Ghosh, D and Debbarman, S. (2014). Management of canine epilepsy refractory to common medication, <i>Indian J. Canine Practice</i> . 5(2). NAAS rating : 2.9.
4.	Raman, B, Batabyal, S., Chattopadhyay, S, Kesh, S.S., Barui, A. (2014) Partial purification and immuno-biochemical characterisation of fertility associated protein of karan fries bull seminal plasma <i>Explor Anim Med Res</i> , Vol.4(1), 57-63. NAAS rating : 3.3.





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

5. P. K. Khan, S. Goswami, S. K. Nandi and P. Mukherjee. (2014). Modified sliding bipedicle flap technique for correction of congenital cleft 5. palate in a mongrel pup. Abstract in: XII Annual Convention of ISACP and National Seminar on "Challenges in diagnosis and management of emerging diseases of canine". NAAS rating : 2.9.

### G.1.7. Department of Veterinary Anatomy & Histology

Sl. No.	Scientific Research Publication in Journals
1	R.K.Choudhary., P.Das and R.K.Ghosh. (2014). A histochemical study on glycogen in the intestinal tract of dog ( <i>Canis familiaris</i> ). <i>Journal of Inter Academia</i> , Vol-18(2), 264-266. NAAS rating : 2.34.
2	R.K.Choudhary., P.Das and R.K.Ghosh. (2014). The histomorphological organization of neuronal structure and associated distribution of Interstitial cells of cajal in the canine cecocolic sphincter. <i>Journal of Inter Academia</i> , Vol-18(2), 242-248. NAAS rating : 2.34.
3	P.Kumar, P.Das, R.Ranjan and A.P.Minj. (2014). Postnatal development of Bursa of fabricious of khaki cambel duck. <i>Indian Journal of Veterinary Anatomy</i> , 26(1) 30-32, June NAAS rating : 4.19.
4	A.Kohsaka, P.Das. (2014). The circadian clock maintain cardiac function by regulating mitochondrial metabolism in mice. <i>Journal of plos-one</i> . vol-9(11). NAAS rating : 9.53
5	P.Das, R.Ranjan and A.P.Minj. (2014). Purification, initial characterization and quantification of khaki cambel duck immunoglobulin. <i>Indian Journal of Veterinary Anatomy</i> , 26(2) 95-96. NAAS rating : 4.19.
6	P.Kumar, P.Das, R.Ranjan and A.P.Minj. (2014). Early postnatal growth of the spleen of khaki cambel duck. <i>Indian Journal of Animal Health</i> . Vol-53 (1) June 41-44. NAAS rating : 2.08
7	S.Kumar., P.Das. (2014). Immunohistochemical identification of ICC in prenatal bovine intestine. <i>Indian Journal of Animal Science</i> . 84(8) 857-859. NAAS rating : 6.00.
8	P.Das, R.Ranjan and S.Paul. (2014). A comparative histological study on the sweat gland of cattle ( <i>b. indicus</i> ) and yak ( <i>p. poepphagus</i> ). <i>Journal of exploratory animal and medical research</i> . Vol-4 Issue 2, p.183-187. NAAS rating : 3.3

### G.1.8. Department of Veterinary Biochemistry

Sl. No.	Scientific Research Publication in Journals
1.	C Ghosh, B Hong, S Batabyal, TI Jeon, SH Yang, SG Hwang. Anti-inflammatory activity of the ethanol extract of <i>Dictamnus dasycarpus</i> leaf in lipopolysaccharide-activated macrophages. <i>BMC complementary and alternative medicine</i> . 14 (1), 330. NAAS rating : 7.88
2.	Aich R, Batabyal S, Joardar SN (2014). Simple purification method for beta-lactoglobulin from buffalo milk. <i>Advances in animal and Veterinary Sciences</i> . 2 (2):78-80.
3.	Samanta I, Joardar SN, Das PK, Das P, Sar TK, Dutta TK, Bandyopadhyay S, Batabyal S and DP Isore. (2014). Virulence repertoire, characterization and antibiotic resistance pattern analysis <i>Escherichia coli</i> isolated from backyard layers and their environment in India. <i>Avian Diseases</i> . 58 (1):39-45. NAAS rating : 7.11.
4.	Pattanayak S, Batabyal S, Patra A. A study on effect of age, breed and sex on blood sugar level of diseased dogs. <i>Explor Anim Med Res</i> . 4(1): 33-43. NAAS rating : 3.30
5.	Raman B, Batabyal S, Chattopadhyay S, Kesh S S, Barui A. Partial purification and immuno-biochemical characterisation of fertility associated protein of karan fries bull seminal plasma. <i>Explor Anim Med Res</i> 4(1): 57-63. NAAS rating : 3.30

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

6.	S Chowdhury, M De, R Guha, S Batabyal, I Samanta, S K Hazra, T K Ghosh, A Konar, S Hazra. Influence of silver nanoparticles on post-surgical wound healing following topical application. <i>European Journal of Nanomedicine</i> . 6 (4), 237-247.
7.	S Mandal, S Chattopadhyay, S Batabyal. Comparative evaluation of fresh and frozen semen quality of jersey (exotic) and gir (indigenous) bulls. <i>Environment and Ecology</i> . 32 (3), 878-880. NAAS rating : 4.09.
8.	Plasma mineral profiles and hormonal activities of normal cycling and repeat breeding crossbred cows: A comparative study – A Barui, S Batabyal, S Ghosh, D Saha and S Chattopadhyay. <i>Veterinary World</i> , 8(1): 42-45. NAAS rating : 5.10

**G.1.9. Department of Veterinary Epidemiology & Preventive Medicine**

Sl. No.	Scientific Research Publication in Journals
1.	D. Chakraborty, C. Guha, U. Biswas, A. Chatterjee, P. S. Jana, S. Biswas, L. Sharma, N. Pradhan, S. Bhagat and B. C. Naha (2014). Studies on thermostability of Newcastle disease virus (local isolate) for preparation of vaccine. <i>Journal of Medical Science and Clinical Research</i> . 2 (1): 327-331
2.	S. Dey, D. P. Isore, S. N. Joardar, U. Biswas, A. Mahanti, S. Pandit, R. N. Hansda, K. Batabyal and I. Samanta (2014). Isolation, molecular identification and antibiogram of <i>Pasteurella multocida</i> in Haemorrhagic Septicaemia outbreak of buffaloes in West Bengal. <i>Indian J. Comp. Microbiol. Immunol. Infect. Dis</i> . 35(2): 90-92. NAAS Rating - 3.61

**G.1.10. Department of Veterinary Gynaecology & Obstetrics**

Sl. No.	Scientific Research Publication in Journals
1.	Uttam Datta, S.K. Bandopadhyay and ML. Hembram. (2014). Structural modification of the Black Bengal Buck ( <i>capra hircus</i> ) Acrosome During post -testicular Maturation of Spermatozoa. <i>International journal of morphology</i> . ; 32(4): 1502-1508. NAAS Rating - 6.20
2.	Amit Kumar Nath, Siddhartha Basu, Uttam Datta. (2015) Coenzyme Q10 and soyphosphatidylcholine in EK extender on preservation of Rhode Island Red poultry semen J Adv Vet Anim Res; 2(2): 134-140.

**G.1.11. Department of Veterinary Medicine, Ethics & Jurisprudence**

Sl. No.	Scientific Research Publication in Journals
1.	Hazarika, J.M., Sarkar, P.K., Chattopadhyay, A., Mandal, T.K., Sarkar, S., (2015) Evaluation of some selected herbs on arsenic -affected cattle in Nadia District, West Bengal, India <i>Environ Sci. Pollut Res</i> (2015) 22:4942-4948
2.	Chandra, S., Pradhan, N.R. and Lodh, C. (2014) Acute Bacterial Enteritis in pups and its treatment, <i>Indian Journal of Canine Practice</i> . 6(2): 123-127.
3.	Lodh, C., Choudhury, S., and Das, S. (2014) Therapeutic Management of Otitis Externa in Dogs. <i>Indian Journal of Canine Practice</i> . 6(1) 9-12.
4.	Chanda, S., Pradhan, N.R., and Lodh, C., (2014) Acute Bacterial Enteritis in Pups and Its Treatment. <i>Indian Journal of Canine Practice</i> . 6(2) 123-127.
5.	Lodh, C., and Das, S. (2014) Diagnostic Significance of Haematobiochemical changes in canine dermatitis. <i>Indian Journal of Canine Practice</i> . 6(2) 99-102.
6.	Joardar, S.N., Halder, A., Maity, A., Mishra, S.K., and Lodh, C. (2014). Seroprevalence of Bluetongue in Ruminants of Orissa. <i>Indian J. Comp. Microbiol. Immunol. Infect. Dis</i> 35(2): 58-60.





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

7.	Tigga, Pinky, Joardar, S.N., Halder, A., Lodh, C., Samanta, I., Devi, P.I., Batabyal, K., and Dey, Samir. (2015) Seroprevalence of bluetongue in ruminants of Jharkhand. <i>Veterinaryworld</i> 8(3): 346-349.
8.	Dhara, K.C., Roy, N., Lodh, C., Bandopadhyay, P.K., Goswami, A., (2015). Frequency of Gastrointestinal Parasites and Egg per gram faeces count of Nematodes in Black Bengal Goat under field condition in West Bengal, India. <i>International Journal of Veterinary Sciences Research</i> 1(1): 5-11.

### G.1.12. Department of Veterinary Microbiology

Sl. No.	Scientific Research Publication in Journals
1.	Mondal, A., Banerjee, S., Patra, A., Adikesavalu, H., Ramudu, R., Dash, G., Joardar, S.N., Abraham, T.J. (2014). Molecular and morphometric characterization of <i>Thelohanellos caudatus</i> (Myxosporaea: Myxobolodae) infecting the caudal fin of <i>Labeo rohita</i> (Hamilton). <i>Protistology</i> 8(2): 41-52. NAAS Rating – 9.59
2.	Samanta, I., Joardar, S.N., Das, P.K., Das, P., Sar, T.K., Dutta, T.K., Bandyopadhyay, S., Batabyal, S., Isore, D. P. (2014). Virulence Repertoire, Characterization and Antibiotic Resistance Pattern analysis of <i>Escherichia coli</i> isolated from Backyard Layers and their Environment in India. <i>Avian Diseases</i> 58 (1): 39-45. NAAS Rating -7.11
3	Dash, J.R., Sar, T.K., Samanta, I., Pal, S., Khan, M., Patra, N.C., Sarkar, U., Majhi, A.K., Mandal, T. K. (2014). Efficacy evaluation of <i>Bauhinia variegata</i> L. stem bark powder as adjunct therapy in chronic <i>Staphylococcus aureus</i> mastitis in goat. <i>Pharmacognosy Magazine</i> 10 (39, S3): S512–S518. NAAS Rating – 7.11
4	Bandyopadhyay, S., Samanta, I., Bhattacharyya, D., Nanda, P.K., Kar, D., Chowdhury, J., Dandapat, P., Das, A.K., Batul, N., Mondal, B., Dutta, T.K., Das, G., Das, B.C., Naskar, S., Bandyopadhyay, U.K., Das, S.C., Bandyopadhyay, S. (2014). Co-infection of methicillin-resistant <i>Staphylococcus epidermidis</i> , methicillin-resistant <i>Staphylococcus aureus</i> and extended spectrum $\beta$ -lactamase producing <i>Escherichia coli</i> in bovine mastitis -three cases reported from India. <i>Veterinary Quarterly</i> 35(1):56-61. NAAS Rating – 6.65
5	Samanta, I., Joardar, S.N., Das, P.K.; Sar, T.K., Bandopadhyay, S., Dutta, T.K., Sarkar, U. (2014). Prevalence and antibiotic resistance profiles of <i>Salmonella</i> serotypes isolated from backyard poultry flocks in West Bengal, India. <i>The Journal of Applied Poultry Research</i> 23 (3): 536-545. NAAS Rating – 6.59
6	Mahanti, A., Samanta, I., Bandopadhyay, S., Joardar, S.N., Dutta, T. K., Sar, T. K., (2014). Isolation, molecular characterization and antibiotic resistance of enterotoxin -producing <i>Escherichia coli</i> (ETEC) and necrotogenic <i>Escherichia coli</i> from healthy buffalo. <i>Veterinaski Arhiv</i> 84(3): 241-250. NAAS Rating – 6.30
7	Sarkar, M., Batabyal, K., Roy, J.P., Mukhopadhyay and Biswas, P. (2014). Isolation, Characterization, Pathogenicity and Antibigram of <i>Clostridium perfringens</i> from Poultry Samples in West Bengal. <i>Indian Veterinary Journal</i> 91(10): 75-77. NAAS Rating – 4.33
8	Mukherjee, P., Chakrabarti, A. Batabyal, K. and Das, B. (2014). Characterization and Antibigram of Pathogenic Staphylococci Isolated from Canine Urinary Tract Infections. <i>Environment and Ecology</i> 32(2A): 715-717. NAAS Rating – 4.09
9	Joardar, S.N., Halder, A., Maity, A., Mishra, S.K. and Lodh, C. (2014). Seroprevalence of bluetongue in ruminants of Orissa. <i>Indian Journal of Comparative Microbiology, Immunology and Infectious Diseases</i> 35 (2): 58-60. NAAS Rating – 3.61

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

10	Dey, S., Isore, D.P., Joardar, S.N., Biswas, U., Mahanti, A., Pandit, S., Hansda, R.N., Batabyal, K., Samanta, I. (2014). Isolation, molecular identification and antibiogram of <i>Pasteurella multocida</i> in Haemorrhagic Septicaemia outbreak of buffaloes in West Bengal. <i>Indian Journal of Comparative Microbiology, Immunology and Infectious Diseases</i> 35(2): 90-92. NAAS Rating - 3.61
11	Paul, I., Isore, D.P., Joardar, S.N., Mukhopadhyay, S. and Ganguli, S. (2014). Pathogenicity test of <i>Staphylococcus</i> sp. by animal inoculation technique. <i>Indian Journal of Comparative Microbiology, Immunology and Infectious Diseases</i> 35 (2): 95-96. NAAS Rating - 3.61
12	Banik, A., Isore, D. P., Joardar, S.N., Batabyal, K., Dey, S. and Samanta, I. (2014). Detection, characterization and antibiogram of <i>Escherichia coli</i> from diarrhoeic dogs of West Bengal. <i>Indian Journal of Comparative Microbiology, Immunology and Infectious Diseases</i> 35 (1): 26-29. NAAS Rating - 3.61
13	Mukherjee, P., Chakrabort, A, Har, T., Batabyal, K. and Das, B. (2014). Study of Haematological Profiles of Dogs Infected with Pathogenic Aerobes. <i>Exploratory Animal and Medical Research</i> 4(1): 81-85. NAAS Rating - 3.30
14	Sar, T.K., Mandal, T.K., Samanta, I. (2014). Milk level of ceftizoxime following single intramuscular dosing of ceftriaxone without and with oral administration of Fibrosin® and its effect on milk enzyme activity in goat. <i>Exploratory Animal and Medical Research</i> 4(2): 188-193. NAAS Rating - 3.30
15	Joardar, S.N., Abraham, T.J. and Mandal, N. (2014). Indian minor carp <i>Labeo bata</i> (Ham.) elicits more cellular immune effector activities than India major carp <i>Labeo rohita</i> (Ham.) and <i>Catla catla</i> (Ham.). <i>Indian Journal of Animal health</i> 53 (1): 9-14. NAAS Rating – 2.08
16	S. Dey, K. Batabyal, D. P. Isore and I. Samanta (2014). Ocular infection by multi -drug resistant <i>Pseudomonas aeruginosa</i> in rabbit. <i>Indian Journal of Animal Health</i> 53(1): 54. NAAS Rating – 2.08
17	Alam, S.S., Panigrahi, A.K., Joardar, S.N. and Biswas, B. (2014). Study of protein profile variation in healthy and diseased black Bengal goat. <i>Indian Journal of Biology</i> 1 (2): 85-88.
18	Nandi, S.K., Kundu, B., Mahato, A., Thakur, N.L., Joardar, S. and Mandal, B.B. (2014). In vitro and in vivo evaluation of marine sponge skeleton as a bone mimicking material. <i>Integrative Biology</i> 7: 250-262.
19	Chowdhury, S., De, M., Guha, R., Batabyal, S., Samanta, I., Hazra, S.K., Ghosh, T.K., Konar, A., Hazra, S. (2014). Influence of silver nanoparticles on post-surgical wound healing following topical application. <i>European Journal of Nanomedicine</i> 6(4): 237-247
20	Alam, S.S., Joardar, S.N. and Panigrahi, A. (2014). Immunobiochemical characterization of native leptin from goat ( <i>Capra hircus</i> ): serodiagnostic potentiality revealed. <i>Advances in Veterinary and Animal Sciences</i> . 2(2): 86-90.
21	Alam, S.S, Joardar, S.N., Panigrahi, A.K. Abraham T.J. Mukherjee, S. and Mukherjee, A. (2014). Immunobiochemical characteristics of purified native leptin protein from Indian major carp, rohu ( <i>Labeo rohita</i> Ham.). <i>Open Journal of Immunology</i> 4: 139-147
22	Das, P., Jana, C., Thulasiraman, P., Ghosh, P., Joardar, S.N., Pandiyan, G.D.V., Mukherjee, J. and Sanyal, S. (2014). In vitro effect of radiofrequency on hsp70 gene expression and immune-effector cells of birds. <i>Advances in Veterinary and Animal Sciences</i> Vol. 2 (1): 31-36
23	Aich, R., Batabyal, S. and Joardar, S.N. (2014). Simple purification method for beta-lactoglobulin from buffalo. <i>Advances in Veterinary and Animal Sciences</i> 2 (2): 78-80.
24	Yeasmin, N., Joardar, S.N., Das, P.K., Das, P., Halder, A. and Alam, S.S. (2014). Seromonitoring of Newcastle disease in backyard poultry by indigenously developed user-friendly tool: dipstick ELISA. <i>Advances in Veterinary and Animal Sciences</i> 2(3S): 16-18.





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

25	Kar, D., Bandyopadhyay, S., Bhattacharya, D., Samanta, I., Mahanti, A., Nanda, P.K., Mondal, B., Dandapat, P., Das, A. K., Dutta, T. K., Bandyopadhyay, S., Singh, R. K. (2015) Molecular and phylogenetic characterization of multidrug resistant extended spectrum beta-lactamase producing <i>Escherichia coli</i> isolated from poultry and cattle in Odisha, India. <i>Infection, Genetics and Evolution</i> 29: 82-90. NAAS Rating – 9.26
26	Mondal, R., Dutta, T.K., Chingthun, S., Roychoudhury, P., Samanta, I., Joardar, S.N., Pachauau, A.R., Chandra, R. (2015). ESBL-producing Shiga-toxigenic <i>E. coli</i> (STEC) associated with piglet diarrhoea in India. <i>Tropical Animal Health Production</i> 47 (2): 377-381. NAAS Rating – 6.97
27	Samanta, I., Joardar, S. N., Das, P.K., Sar, T.K. (2015). Comparative possession of shiga toxin, intimin, enterohaemolysin and major extended spectrum beta lactamase genes in <i>E. coli</i> isolated from backyard and farmed poultry in West Bengal, India. <i>Iranian Journal of Veterinary Research</i> 16(1): 90-93. NAAS Rating – 6.22
28	Mahanti, A., Samanta, I., Bandyopadhyay, S., Joardar, S. N. (2015). Molecular characterization and antibiotic resistance pattern of caprine Shiga toxin producing- <i>Escherichia coli</i> (STEC) isolates from India. <i>Iranian Journal of Veterinary Research</i> 16(1): 31-35. NAAS Rating – 6.22
29	Das, M., Isore, D.P., Joardar, S.N., Samanta, I. and Mukhopadhyay, S. (2015). Immunomodulatory effect of levamisole on PPR vaccines in goats and change in haematological profile. <i>Indian Journal of Animal Research</i> . DOI: 10.5958/0976-0555.2015.00093.X. NAAS Rating – 6.03
30	Samanta, I., Joardar, S.N., Ganguli, D., Das, P.K., Sarkar, U. (2015). Evaluation of egg production after adoption of biosecurity strategies by backyard poultry farmers in West Bengal. <i>Veterinary World</i> 8 (2): 177-182. NAAS Rating – 5.10
31	Tigga, P., Joardar, S. N., Halder, A., Lodh, C., Samanta, I., Isore, D.P., Batabyal, K., Dey, S. (2015). Seroprevalence of bluetongue in ruminants of Jharkhand. <i>Veterinary World</i> 8 (3): 346-349. NAAS Rating – 5.10
32	Aich, R., Batabyal, S. and Joardar, S.N. (2015). Isolation and purification of beta- lactoglobulin from cow milk. <i>Veterinary World</i> 8(5): 621-624. NAAS Rating – 5.10

### G.1.13. Department of Veterinary Parasitology

Sl. No.	Scientific Research Publication in Journals
1.	Prakash, O., Mandal, S.C., Sanyal, P.K. and Pal, S. (2014). Infection load of <i>Haemonchus contortus</i> in local breed of goats of Chhattisgarh and correlation with haemoglobin values., <i>Vet. Sci. Res. J.</i> , 5 (2): 5-8. NAAS Rating – 2.04
2.	S. Dey*, D.P. Isore, S.N. Joardar, U. Biswas, A. Mahanti, S. Pandit, R.N. Hansda, K. Batabyal and I. Samanta. (2014). Isolation, molecular identification and antibiogram of <i>Pasteurella multocida</i> in haemorrhagic septicemia outbreak of buffaloes in West Bengal., <i>Indian J. Comp. Microbiol. Immunol. Infect. Dis.</i> , 35(2): 90-92. NAAS Rating – 3.61

### G.1.14. Department of Veterinary Pathology

Sl. No.	Scientific Research Publication in Journals
1.	Das, M., Isore, D.P., Joardar, S.N., Samanta, I. and Mukhopadhyay S.K. (2015) Immunomodulatory effect of levamisole on PPR vaccine in goats and change in haematological profile. <i>Indian J. Anim. Res.</i> , DOI: 10.5958/0976-0555.2015.00093.X. NAAS Rating: 6.4

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

2.	Kar, I., Mukhopadhyay, S.K., Patra, A.K. and Pradhan S. Metal Concentrations and Histopathological Changes in Goats ( <i>Capra hircus</i> ) Reared Near an Industrial Area of West Bengal, India(2015) Archives of environmental contamination and toxicology, 1-12. NAAS Rate: 7.6
3.	Jana C, Mukhopadhyay S.K, Bhowmik M. K, Mandal P. S, Biswas S and Mondal B. (2014). Pathological and molecular diagnosis of duck enteritis virus in Khaki Campbell ducks in a field outbreak. <i>Indian J. Vet. Pathol.</i> , 38(3): 181-185 NAAS Rating: 5.03
4.	Mondal S, Sengupta T, Pradhan S, Hansda RN, Mandal PS ,Tiwari R and Mukhopadhyay S.K, (2014) Impaired learning and memory after a week long exposure of acetaminid in adult rats. <i>Advances in Animal and Veterinary Sciences</i> 2 (10), 543-548.
5.	Singh KS, Mukhopadhyay SK, Majumder S, Laha R and Niyogi D (2014) Study on different aspects of Stephanofilarial dermatitis infection in cattle population of West Bengal. <i>IIOAB Journal</i> 5 (1), 19-22.
6.	Adak A., Eswarappa R. and Mukhopadhyay S. K.(2014) Congenital anomalies in the thyroid gland of Wistar rats: Ultimobranchial cyst and ectopic thymus PMC <i>Indian Journal of Veterinary Pathology</i> 38 (3) NAAS Rating: 5.03
7.	Jana C, Mukhopadhyay SK, Bhowmik MK, Mandal PS, and Biswas S (2014) Pathological and molecular diagnosis of duck enteritis virus in Khaki Campbell ducks in a field outbreak <i>Indian Journal of Veterinary Pathology</i> 38 (3), 181-185. NAAS Rating: 5.03
8.	Isore D.P., Goswami T.K., Chaudhury P., Mukhopadhyay S.K. and Ganguly S. (2014) Recombinant Protein and DNA Vaccine Construct of <i>Brucella abortus</i> L7/L12 Gene Elicits Immune Response <i>Asian Pac. J. Health Sci.</i> , 2014; 1(4): 425-437.
9.	Mondal S., Ghosh R.C., Mukhopadhyay S.K and. Ganguly S ( 2014) Effects of electrolytes, microelements and multiple exposure of Acetaminid on wistar rats <i>Asian Pac. J. Health Sci.</i> , 1(4): 329-334
10.	Sarkar, M, Batahyal K., Roy J. P, Mukhopadhyay, S.K. and Biswas P. (2014) Isolation, Characterization, Pathogenicity and Antibigram of <i>Clostridium Perfringens</i> from Poultry Samples in West Bengal. <i>Indian Vet. J.</i> , October 2014, 91 (10):75 – 77. NAAS Rating: 6.0
11.	Chudamani Sharma and Mukhopadhyay, S.K (2015) Studies on different pathological conditions of yak ( <i>Pheophagus grunions</i> ) in Sikkim <i>Indian J. Vet. Pathol.</i> , 39(2) : 233. NAAS Rating: 5.03
12.	Yasmine Begum and Mukhopadhyay, S.K (2015) Clinicopathological and pathomorphological studies on benalaxyl (fungicide) induced toxicity in mice. <i>Indian J. Vet. Pathol.</i> , 39(1) : 233. NAAS Rating: 5.03
13.	Saktipada Pradhan and Mukhopadhyay, S.K (2014) Clinicopathomorphological studies on murine toxoplasmosis and evaluation of PCR based diagnosis with special reference to molecular characterization of <i>Toxoplasma gondi</i> SAG2 gene <i>Indian J. Vet. Pathol.</i> , 39(2) : 109. NAAS Rating: 5.03
14.	Ganguly S. and Mukhopadhyay S. K. (2014) A Comprehensive Review on Reproductive Tract Infections Causing Fetal Deaths and Abortions in Large Ruminants. <i>Asian Pac. J. Health Sci.</i> , 2014; 1(4S): 54-57.
15.	S.Dey, D P Isore, S.N. Joardar, U.Biswas, A .Mahanti, S.Pandit, R.N.Hansda, k.Batabyal and I. Samanta. Isolation, Molecular Identification And Antigram Of <i>Pasteurella multocida</i> In Haemorrhagic Septicaemia Outbreak Of Buffalos In West Bengal. <i>Indian j. Comp. Microbial infect. Dis.</i> Vol 35(2): 90-92. NAAS Rating. 3.61





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

### G.1.15. Department of Veterinary Pharmacology & Toxicology

Sl. No.	Scientific Research Publication in Journals
1.	I Samanta, SN Joardar, PK Das, TK Sar (2015). Comparative possession of shigatoxin, intimin, enterohaemolysis and major extended spectrum betalactamase (ESBI.) genes in <i>Escherichia coli</i> isolated from backyard and farmed poultry, <i>Iranian Journal of Veterinary Research</i> .16(1); 90-93. NAAS Rating: 6.22
2.	Shivaji Bhattacharya, Jeevan Ranjan Dash, Pabitra Hriday Patra, Sourabh Kumar Dubey, Anup Kumar Das, Tapan Kumar Mandal, Susanta Kumar Bandyopadhyay (2013). Spatio-temporal variation of Mercury in Bidyadhari river of Sundarban Delta, India. <i>Exploratory Animal and Medical Research</i> . 4(1); 19-32. NAAS Rating: 3.30
3.	Shivaji Bhattacharya, Sourabh Kumar Dubey, Jeevan Ranjan Dash, Pabitra Hriday Patra, Anup Kumar Das, Tapan Kumar Mandal and Susanta Kumar Bandyopadhyay (2014). Assemblages of total Mercury in the tropical microbial Bidyadhari estuarine stretches of Indian Sundarban mangrove eco-region. <i>J Environ Anal Toxicol</i> 4:241. doi: 10.4172/2161-0525.1000241. NAAS Rating: 3.30
4.	Shivaji Bhattacharya, Sourabh Kumar Dubey, Jeevan Ranjan Dash, Anup Kumar Das, Tapan Kumar Mandal, Susanta Kumar Bandyopadhyay (2014). Contamination status of Cadmium in different biotic and abiotic components around the Bidyadhari river of Indian Sundarban delta. <i>Exploratory Animal and Medical Research</i> . 4(2); 158-171. NAAS Rating: 3.30
5.	I Samanta, SN Joardar, PK Das, TK Sar, S Bandyopadhyay, TK Dutta, U Sarkar (2014). Prevalence and antibiotic resistance profiles of Salmonella serotypes isolated from backyard poultry flocks in West Bengal, India. <i>The Journal of Applied Poultry Research</i> . 23(3); 536-545. NAAS Rating: 6.59
6.	Dash JR, Sar TK, Samanta I, Pal S, Khan M, Patra NC, Sarkar U, Maji AK, Mandal TK (2014). Efficacy evaluation of Bauhinia variegata L. stem bark powder as adjunct therapy in chronic Staphylococcus aureus mastitis in goat. <i>Pharmacogn Mag</i> . 2014 Aug;10(Suppl 3):S512-8. doi: 10.4103/0973-1296.139786 NAAS Rating: 7.11
7.	Dash JR, Sar TK, Samanta I, Pal S, Khan M, Patra NC, Sarkar U, Maji AK, Mandal TK (2014). Milk level of ceftiozime following single dosing of ceftriaxone without and with oral administration of fibrosin® and its effect on milk enzyme activity in goat. <i>Pharmacogn Mag</i> . 2014 Aug;10(Suppl 3):S512-8. doi: 10.4103/0973-1296.139786. NAAS Rating: 3.30
8.	Achintya Mahanti, Indranil Samanta, Samiran Bandyopadhyay, Siddhartha N Joardar, Tapan K Dutta, Tapas K Sar (2014). Isolation, molecular characterization and antibiotic resistance of Enterotoxigenic <i>E. coli</i> (ETEC) and Necrotoxigenic <i>E. coli</i> (NTEC) from healthy water buffalo. <i>Veterinarski arhiv</i> . 84(3). 241-250. NAAS Rating: 6.30
9.	Tapas Kumar Sar, Tapan Kumar Mandal, Pabitra Hriday Patra, Indranil Samanta (2013). Disposition kinetics of ceftriaxone and sulbactam (1:1) in black Bengal goats with experimental mastitis. <i>Researchgate</i> . 38(4). DOI: 10.1007/s13318-013-0129-x
10.	Shibabrata Pattanayak, Subodh Pal, Tapan Kumar Mandal, Pratip Kumar Debnath, Susanta Kumar Bandyopadhyay (2014). A comparative study of extract of succulent leaves of living plant with methanolic and aqueous extract of <i>Berberis lupulina</i> Lindl. against pathogenic microbes by disc diffusion and spectrophotometry. <i>Explor Anim Med Res</i> , Vol.4, Issue - 2, 2014, p. 148-157. NAAS Rating: 3.30

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

## G.1.16. Department of Veterinary Physiology

Sl. No.	Scientific Research Publication in Journals
1.	Das PK, Jana C, Thulasiraman P, Ghosh PR, Joardar SN, G. D. V. Pandiyan, Mukherjee J and Sanyal S (2014). In vitro effect of radiofrequency on hsp70 gene expression and immune-effector cells of birds. <i>Advances in Animal and Veterinary Sciences</i> , 2 (1): 31–36. Impact Factor - 0.547
2.	Samanta I, Joardar SN, Das PK, Das P, Sar TK, Dutta TK, Bandyopadhyay S, Batabyal S and Isore DP (2014). Virulence repertoire, characterization, and antibiotic resistance pattern analysis of <i>Escherichia coli</i> isolated from backyard layers and their environment in India. <i>Avian Diseases</i> , 58:(1) 39–45. NAAS Rating – 7.1.
3	Yeasmin N, Joardar SN, Das PK, Das P, Halder A, Alam S (2014). Seromonitoring of newcastle disease in backyard poultry by indigenously developed user-friendly tool; dipstick ELISA. <i>Advances in Animal and Veterinary Sciences</i> , 2 (3S): 16–18. Impact Factor - 0.547
4	Das P K, Goswami A. and Mazumdar D. (2014). Study on marketing of poultry meat and egg. <i>International Journal of Development Research</i> , 4(5): 1043-1047. Impact Factor - 0.613
5	Samanta I., Joardar S. N., Das P K, Sar T. K., Bandyopadhyay S., Dutta T. K. and Sarkar U. (2014). Prevalence and antibiotic resistance profiles of <i>Salmonella</i> serotypes isolated from backyard poultry flocks in West Bengal, India. <i>Journal of Applied Poultry Research</i> , 23:1–10. NAAS Rating – 6.59.
6	Das P K, Ghosh PR, Pradhan S, Roy B and Mazumdar D (2014) Benefit cost analysis of Rhode Island Red chicken rearing in backyard on the basis of egg production performance, <i>Veterinary World</i> 7(8): 605-609. NAAS Rating – 5.1.
7	Das P K, Ghosh P R, Biswas S., Goswami A. and Mazumdar D. (2014) Market potentiality of backyard poultry rearing system in West Bengal. <i>International Journal of Agriculture and Statistical Science (Int. J. Agricult. Stat. Sci.)</i> , 10 (Supplement 1): 53-58. Impact Factor - 0.01.
8	Roy B, Joardar S. N., Samanta I., Das P K, Alam Sk S. and Nandi S. (2014). Detection of T- and B-cell Target Antigens of Fowlpox Virus Isolated from Backyard Chickens in India, <i>Avian Diseases</i> 59:000–000 (Accepted). NAAS Rating – 7.1.
9	Bhatta M, Das D, Ghosh PR (2014): The Influence of Ambient Temperature on Thyroid Activity, Erythrocytic Indices and Some Biochemical Parameters of Black Bengal Goats ( <i>Capra aegagrushircus</i> ). <i>Indian Journal of Biology</i> , 1(2): 54-58
10	Bhatta M, Das D, Ghosh PR (2014): The Effect of Ambient Temperature on Some Biochemical Profiles of Black Bengal Goats ( <i>Capra aegagrushircus</i> ) In Two Different Agro-Climatic Zones in West Bengal, India. <i>IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS)</i> , 9(4):32-36. Impact Factor - 1.52
11	Thulasiraman P., Banerjee D., Mohanty N., Das P K, Ghosh P R, Mukherjee J., Paul A., Das A. K., Nanda P. K., Naskar S., Mohan N. H., Sarkar M. and Das B. C. (2015). A comparative study on the expression profile of MCTs and HSPs in Ghungroo and Large White Yorkshire breeds of pigs during different seasons. <i>Cell Stress and Chaperones</i> , 20 (1) DOI 10.1007/s12192-014-0569-5 Online published. Impact Factor - 2.54
12	Samanta I., Joardar S. N., Ganguli D., Das P K and Sarkar U. (2015). Evaluation of egg production after adoption of biosecurity strategies by backyard poultry farmers in West Bengal, <i>Veterinary World</i> , 8(2):177-182. NAAS Rating – 5.1.





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

13	Samanta I., Joardar S. N., Das P K and Sarkar T.K. (2015). Comparative possession of Shiga toxin, intimin, enterohaemolysin and major extended spectrum beta lactamase (ESBL) genes in <i>Escherichia coli</i> isolated from backyard and farmed poultry, Iranian Journal of Veterinary Research, 16(1):90-93. NAAS Rating – 6.22
14	Das K, Asaithambi P, Sanyal S, Ghosh P R and Das P K (2015). Adrenalectomy of goats: Studies on plasma minerals and subsequent influence on electrocardiogram. Indian Journal of Animal Science, 85 (2): 158–160. NAAS Rating – 6.00
15	Mukherjee J, De K, Chaudhury M, Dang A. K (2015). Seasonal variation in in vitro immune reactivity of milk leukocytes in elite and non elite cross bred cows of Indian sub tropical semi arid climate. Biological Rhythm Research. DOI:10.1080/ 09291016.2015.1020200. Impact Factor – 1.22
16	Swarnava Gain, Joydip Mukherjee, Saibal Chattopadhyay, Subhashis Batabyal and Chanchal Guha. 2015. In vitro activity of blood and milk leukocytes together with the serum enzyme profile during subclinical mastitis in cross bred cows. Accepted in Indian Journal of Animal Sciences (Expected date of Publication August 2015). NAAS Rating – 6.00.
17	Dipak Banerjee, Ramesh C. Upadhyay, Umesh B. Chaudhary, Ravindra Kumar, Sohanvir Singh, Ashutosh, Tapan K. Das & Sachinandan De (2015) Seasonal variations in physiobiochemical profiles of Indian goats in the paradigm of hot and cold climate, Biological Rhythm Research, 46:2, 221-236, DOI: 10.1080/09291016.2014.984999. Impact Factor – 1.22
18	Ayan Mukherjee , Gulshan Dass , Jagan Mohanarao G. , Vinay Kumar Katneni , Dipak Banerjee , Tapan Kumar Das , Moloya Gohain , A. K. Chakrabarty , Tirtha Kumar Datta & Sachinandan De (2015) Copy Number Differences of Y Chromosomal Genes Between Superior and Inferior Quality Semen Producing Crossbred ( <i>Bos taurus</i> × <i>Bos indicus</i> ) Bulls, Animal Biotechnology, 26:1, 65-72, DOI: 10.1080/10495398.2014.887020. Impact Factor – 0.64

### G.1.17. Department of Veterinary Public Health

Sl. No.	Scientific Research Publication in Journals
1.	Antibiotic Sensitivity and Virulence Potential Study of <i>Aeromonas sp.</i> Isolated from Retailed Fish and Chicken in and around Kolkata. <i>Journal of Cell and Tissue Research</i> NAAS Rating: 4.38
2.	Incidence and Biochemical Characterization of <i>Aeromonas sp.</i> Isolated from Retailed Fish and Chicken in North Kolkata Region. <i>Journal of Cell and Tissue Research</i> NAAS Rating: 4.38
3.	<i>Staphylococcus aureus</i> in dairy animals and farm workers in a closed herd in Karnal, North India: assessment of prevalence rate and COA variations. <i>International journal of innovative research in science engineering and technology</i> .

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

## G.1.18. Department of Veterinary Surgery &amp; Radiology

Sl. No.	Scientific Research Publication in Journals
1.	Nirparaj Pradhan Rajdeep Guha Sushovan Chowdhury, Sudip Nandi, Aditya Konar, Sarbani Hazra. Curcumin Nanoparticles inhibit corneal neovascularisation. <i>Journal of Molecular Medicine</i> . 2015. 4.7 impact
2.	Mishra A, Dewangan G, Singh WR, Hazra S, Mandal TK. A simple reversed phase high-performance liquid chromatography (RP-HPLC) method for determination of curcumin in aqueous humor of rabbit. <i>J Adv Pharm Technol Res</i> . 2014 Jul;5(3):147-9.
3	Sushovan Chowdhury, Munmun De, Rajdeep Guha, Subhasis Batabyal, Indranil Samanta, Samir Kumar Hazra, Tamal Kanti Ghosh, Aditya Konar and Sarbani Hazra. Influence of silver nanoparticles on post-surgical wound healing following topical application. <i>Eur. J. Nanomed</i> . 2014;6(4): 237-247
4.	A. Mukherjee, H, Malik, A. P. Saha, D. K. Singhal, A. Dubey, S. Boateng, S. Saugandhika, S. Kumar, S. De, S. K. Guha, and D. Malakar. Resveratrol treatment during goat oocytes maturation enhances developmental competence of parthenogenetic and hand-made cloned blastocysts by modulating intracellular glutathione level and embryonic gene expression. (2014). <i>Journal of Assisted Reproduction and Genetics</i> . 31(2): 229-239. Impact factor 1.8; NAAS Rating – 7.8
5.	Dubey, A., H. N. Malik, D. K. Singhal, S. Saugandhika, S. Boateng, R. Singhal, S. Fatima, V. Sharma, S. Saini, S. Kumar, S. K. Guha and D. Malakar. Isolation, characterization and in vitro differentiation of goat adipose-tissue-derived mesenchymal stem cells into pancreatic islets-like cells. (2014). <i>Reproduction, Fertility and Development</i> . 26(1): 213-213. Impact factor 2.6; NAAS Rating – 8.6
6.	Malik, H. N., A. Dubey, D. K. Singhal, S. Saugandhika, S. Boateng, S. Fatima, R. Singhal, V. Sharma, S. Saini, S. Kumar, S. K. Guha and D. Malakar. Isolation, characterization, and differentiation of adipose tissue derived mesenchymal stem cells: an autologous transplantation to patients. (2014). <i>Reproduction, Fertility and Development</i> . 26(1): 216-216.; NAAS Rating – 8.6
7.	Hruda Nanda Malik Dinesh Kumar Singhal Shrivani Saugandhika Sushil Kumar Mohapatra Shyamal Kanti Guha Dhruba Malakar. Generation of handmade cloned embryos from adipose tissue derived mesenchymal stem cells in goat. (2014). <i>Small Ruminant Research</i> . (Accepted). Impact Factor 1.09; NAAS Rating 7.09
8.	Promita Bhattacharjee, Howa Begam, Abhijit Chanda, Samit Kumar Nandi. 2014. Animal trial on zinc doped hydroxyapatite: A case study. <i>Journal of Asian Ceramic Societies</i> . 2(1): 44–51
9.	Howa Begam, Somali Mandal, Abhijit Chanda, Jayanta Mukherjee and Samit Kumar Nandi. 2014. Effect of zinc doping on the biological properties of biphasic calcium phosphate ceramics in orthopedic animal model. <i>Trans Ind Cer Soc</i> . 73(4): 1-9. 6.233. NAAS Rating – 6.233
10.	Howa Begam, Sarmita Sinha, Samit Kumar Nandi and Abhijit Chanda 2014. Effect of Temperature on the Rheological Behavior, Slip Effect of Temperature on the Rheological Behaviour, Slip Casting Rate and Densification of Calcium Hydroxyapatite Slurry <i>Trans Ind Cer Soc</i> . 73(4): 1-6. NAAS Rating – 6.233





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11	Samit K. Nandi, Biswanath Kundu, Arnab Mahato, Narsinh L. Thakur, Siddhanta N. Joardar and Binait D. Mandal. 2015. In vitro and In vivo evaluation of marine sponge skeleton as a bone mimicking biomaterial. <i>Integrative Biology</i> . 7, 250–262 (Impact Factor - 3.996). NAAS Rating – 9.996
12.	Samit Kumar Nandi, Biswanath Kundu, Jayanta Mukherjee, Someswar Datta and Vamsi Krishna Balla. Converted coralline hydroxyapatite implants with growth factors: In vivo bone regeneration. <i>Material Science and Engineering C</i> 2015, 49: 816-823 (Impact Factor - 2.736). NAAS Rating – 8.736
13.	Das, Utpal, A. K. Maji and Samanta, A. (2014) Effect of Rabies Control Programme in Rural West Bengal- an approach towards Rabies Free India by 2020. <i>APCRI Jr. Vol. XV, Issue II</i> , pp. 24-26.
14.	Maji, A.K. and Majie Arnab Kumar (2014) Mega esophagus and its management in three different large breed adult bitches. <i>Ind. Jr. of Canine Practice</i> . Vol. 6, issue- 1, pp. 69-71. NAAS Rating – 2.76
15.	Maji, A.K. and Arindam Samanta (2014) SURGICAL TREATMENT OF SALIVARY FISTULA IN A BULLOCK. <i>Exploratory Animal and Medical Research</i> . Vol. 4, Issue - 1, 2014, p. 113-115. NAAS Rating – 3.30
16.	J.R.Dash, T.K.Sar, I.Samanta, S.Pal, M.Khan, N.C.Patra, U.Sarkar, A.K.Maji and T.K.Mandal (2014) Efficacy evaluation of Bauhinia Variegata L. Stem bark powder as adjunct therapy in chronic Staphylococcus aureus mastitis in goats. <i>Pharmacognosy Magazine</i>   Vol 10   Issue 39 (Supplement 3); 512-518. NAAS Rating – 7.11

### G.1.19. Department of Veterinary & Animal Husbandry Extension Education

Sl. No.	Scientific Research Publication in Journals
1.	Biswas, S; Goswami, A. and Mazumdar, D (2014). Development of Cognitive Knowledge test scale on Small Animal Farming Practices. <i>International Jr. of Development Research</i> , Vol. 4(4): 923-926.
2.	Dutta, Saswati, Goswami, A., Mazumdar, D and Pal, B (2014). Adoption behavior of tribal women in relation to Animal Husbandry Practices in Purulia, West Bengal. <i>International Journal of Social Science Research</i> , Vol. 3: 95 – 102.
3.	Ganguli, A., Acharjee, S. K., Goswami, A. and Mazumdar, D. (2014). Skills and participation of women in the urban vegetable market: The distribution and characteristics. <i>International Journal of Development Research</i> , Vol. 4, Issue – 2, pp. 347 – 354, Feb.
4.	Gazi, A.M., Goswami, A. Mazumdar, D. And Pal, B. (2014). Backyard poultry farming system: women and its role. <i>International Journal of Development Research</i> , Vol. 4, Issue – 5, pp 1122 – 1124, May.
5.	Das, P. K, Goswami, A. And Mazumdar, D. (2014). Study on marketing of poultry meat and egg. <i>International Journal of Development Research</i> , Vol. 4, Issue – 5, pp 1043 – 1047, May.
6.	De, Amitendu, Goswami, A. and Mazumdar, D. (2014). Demographic profile and distribution of livestock farmers according to knowledge and awareness level in Institute Village Linkage Programme. <i>Int. J. Curr. Microbiol. App. Sci.</i> 3(7): 378 – 384.
7.	De, Amitendu, Goswami, A. and Mazumdar, D. (2014). A study on Correlation involved in knowledge, adoption and awareness indices of livestock farmers versus independent variables. <i>Int. J. Adv. Res. Biol. Sci.</i> 1(4): 52 – 56

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8.	De. Amitendu, Goswami. A. and Mazumdar, D. (2014). Study on relationship of Independent variables with knowledge and awareness level of livestock farmers engaged in IVLP bone crushing units. International Journal of Development Research, Vol. 4, Issue –7, pp1380–1383, July
9.	De. Amitendu, Goswami. A. and Mazumdar, D. (2014). A study on knowledge, adoption and awareness level of livestock owners in Paschim Medinipore district, West Bengal. International Journal of Research in IT & Management. Vol. 4, Issue 6: 13–28, June.
10.	De.Amitendu,Goswami.A, and Mazumdar.D.(2014).Study on level of attributes involving knowledge ,adoption and awareness of livestock farmers engaged in Institution Village Linkage Programme .International Journal of Advanced Research in Management and Social Sciences,Vol.3,No.7,July:13-19.
11.	Saha, Priyanka, Goswami, A, Mazumder, D, and Pal,B(2014).A Comparative Study on Behaviour of Meat Consumers in Rural and Urban areas of West Bengal. International Journal of Current Microbiology and Applied Sciences,3(8):653-657.
12.	De.Amitendu,Goswami.A, and Mazumdar.D.(2014).Adoption Behaviour of Livestock Farmers in Paschim Medinipur District of West Bengal, India.Int.J.Curr.Microbiol. App.Sci.3(8):666-672.
13.	Pal,B.and Goswami,A(2014).A study on the Socio-Economic conditions of tea garden labours in Jalpaiguri district of West Bengal, India. International Journal of Advanced Research in Management and Social Sciences.3(8):84-90.
14.	Mukherjee, M.,Goswami,A, Mazumdar, D and Pal,B (2014).A study on health profile of beedi workers in West Bengal ,India. International Journal of Advanced Research in Management and Social Sciences.3(8):17-25.
15.	Pal.B. ,Roy,Satabdi, Goswami,A and Mazumder,D(2014).Status of rural women engaged in floriculture activities .International Journal of Development Research,Vol.4(8):1562-1564.
16.	De.Amitendu,Goswami.A, and Mazumdar.D.(2014).A study to find the Relation between Knowledge Index, Adoption Index and Awareness Index of Selected Animal Husbandry Practices with the Exogenous Variables. International Research Journal of Social Sciences,Vol.3(9):/-13.September.
17.	Ghosh.D., Goswami.A.and Mazumdar.D(2014).Mean effect of studied variables related to child labour in DumDum Municipality. International Journal of Social Science Research, Fall.
18.	Das. P. K., Ghosh. P. R., Biswas. S., Goswami. A. and Mazumdar(2014) Market potentiality of backyard poultry rearing system in West Bengal. Int. J. Agricult. Stat. Sci. (10), Supplement 1, pp: 53 – 58.
19.	Ghosh.D., Goswami.A. (2014) Correlation of studied variables related to child labor in Dum Dum Municipality of North 24 – Parganas District of West Bengal. International Journal of Current Research vol. 6, issue, 12, pp. 10724-10728, December.
20.	Bara, Shilpi Priya Sunita and Ganguli, Debasis (2014). Management of livestock in natural disaster: Perception and expectation of phailin affected farmers. Indian Journal of Animal Health, 53(1): 45-48. NAAS Rating – 2.08
21.	Samanta, I, , Joardar, S. N. , Ganguli, D. , Das, P. K. and Sarkar, U (2015). Evaluation of egg production after adoption of biosecurity strategies by backyard poultry farmers in West Bengal. Veterinary World, 8(2): 177-182. NAAS Rating – 5.10





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

### G.2. RESEARCH PUBLICATIONS FACULTY OF FISHERY SCIENCES

#### G.2.1. Department of Aquaculture

Sl. No.	Scientific Research Publication in Journals
1	T. K. Ghosh, B. K. Paul, D.N. Chattopadhyay and R. N. Mondal. 2013. Duckweed ( <i>Lemna minor</i> ) as feed ingredient for fry of common carp ( <i>Cyprinus carpio</i> ). <i>J. Inland Fish. Soc. India</i> , 45 (1). 19-23, 2013.
2.	Bhanu Prakash. Ch and T.K.Ghosh. 2013. Better management practices (BMPs) in the culture of <i>Litopenaeus vannamei</i> (Boone, 1931). <i>Aqua Tech</i> . Volume 12, pp 73-76, 2013.
3.	Bhanu Prakash. Ch, D.R.K Reddy, T. K. Ghosh, Alok Rajak and D. Ramalingaiah. Effect of different protein levels of Cyclopeeze meal on growth, survival and carcass composition of <i>Litopenaeus vanamei</i> (Boone, 1931). <i>The Bioscan</i> , 9(3): 1093-1096, 2014.
4.	Effect of pen farming on soil and water qualities of a small river with special reference to productivity. Alok Rajak, T. K. Ghosh and Bhanu Prakash. Ch. <i>The Ecoscan</i> . 8 (1 & 2): 149-155. 2014.
5.	Bhanu Prakash. Ch, T. K. Ghosh, Koteswar. B, Alok Rajak and Sanjeev Kumar. Studies on the effect of different dietary protein levels of soyabean meal on growth, survival and carcass composition of <i>Litopenaeus vanamei</i> (Boone, 1931). <i>International Journal of Food and Nutritional Sciences</i> . 4(1): 107-113. 2015.

#### G.2.2. Department of Aquatic Animal Health

Sl. No.	Scientific Research Publication in Journals
1.	Abraham, T. J. Banerjee, S. Patra, A. Sarkar, A. Adikesavalu, H. & Dash, G. (2015) Molecular phylogeny of <i>Myxobolus orissae</i> (Myxosporea: Myxobolidae) infecting the gill lamellae of mrigal carp <i>Cirrhinus mrigala</i> (Actinopterygii: Cyprinidae).: <i>Mol. Biol. Res. Communications</i> (MBRC) 4(1):15-24. Impact Factor (5.01), P ISSN: 2322-181X E ISSN: 2435-2005 (International)
2.	Dash, G. Sharma, B. B. Chakraborty, D. & Mukherjee, D. (2015) Parasitic study of Indian Major Carp <i>Catla catla</i> (Hamilton, 1822) in selected districts of West Bengal, India.: <i>Int. J. Adv. Sci. and Tech. Res. (IJAST)</i> , 5 (1): 79-83. Impact Factor (2.94), ISSN 2249-9954 (International)
3.	Kurva, R. R. & Dash, G. (2015) Histopathological alterations in the vital organs of Indian Major Carps with parasitic Infestations in Fish Farms of West Bengal, India.: <i>Drug dev. and therapeutics</i> , 6(1): 38-41. Impact Factor (3.94), (International)
4.	Chattopadhyay, N. R. Sui, P. K. Dash, G. & Mahapatra, T. K. (2015) Prevalence of Carp diseases in relation to water Quality parameters in the culture areas of West Bengal, India.: <i>Int. J. of Current Res</i> , 7(1):11869-11872. Impact Factor (1.125), (ISSN: 0975-833X) (International)
5.	Dash, G. Majumder, D & Kurva, R. R. (2015) Seasonal distribution of parasites in fresh water exotic carps of West Bengal, India.: <i>Ind. J. Anim. Res</i> , 49(1): 95-102. (NAAS rating 6.4), Print ISSN: 0367-6722, Online ISSN: 0976-0555
6.	Kurva, R. R. Rajesh, S. C. & Dash, G. (2015) A Review on Biopharmaceuticals from Therapeutic Fishes and Ichthyotherapy.: <i>Proc. Nat. Con. Cha. Bio. Res. Mari</i> , 145-156. ISBN978-81-927762-0-0 (National)
7.	Banerjee, S. Patra, A. Adikesavalu, H. Mondal, A. Dash, G. & Abraham, T. J. (2015) Spinning (Whirling) Disease in Indian Major Carp Fingerlings.: <i>Proc. Nat. Con. Cha. Bio. Res. Mari</i> , 50-55. ISBN978-81-927762-0-0 (National)

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

8.	Gharma, R. B. & Dash, G. (2015) New Dimensional Approaches of Nanotechnology in the diversified field of Fisheries and Aquaculture.: Aquatech, Jan. 78-80. NA
9.	Dash, G. Sharma, B. B. Rajesh, S. C. & Abraham, T. J. (2014) Parasitic Study of <i>Labeo bata</i> (Hamilton, 1822) in selected Districts of West Bengal, India.: Int. J. of Adv. Biotech. And Res, 5(3):313-324. Impact Factor (5.01), ISSN (Online): 2278-599X (International)
10.	Rajesh, S. C. Banerjee, S. Patra, A. Dash, G. & Abraham, T. J. (2014) Molecular characterization of <i>Myxobolus cuttacki</i> (Myxozoa, Myxosporea, Bivalvulida) infecting gill lamellae of minor carp <i>Labeo bata</i> (Ham.): Mol. Biol. Res. Communications (MBRC), 3(4):1-9. Impact Factor (5.01), P ISSN. 2322 181X E ISSN: 2435-2005 (International)
11.	Kurva, R. R. & Dash, G. (2014) Prevalence, morphology and scanning electron microscopy study of myxozoan parasites.: J. parasitic diseases, DOI 10.1007/s12639-014-0505-8. Impact Factor : ISSN: 0975-0703 (electronic version) Journal no. 12639
12.	Mondal, T Sharma, B. B. & Dash, G. (2014) Parasitic Disease Management Strategies in the Carp Hatcheries of West Bengal, India.: Int. J. of Adv. Scientific and Tech. Res.(IJAST), 4 (4): 156-164. Impact Factor (2.94), ICV: 6.72 ISSN 2249-9954 (International)
13.	Sharma, B. B. Dash, G. Alam, S & Chakraborty, D. (2014) Effects of Monogenean Fish Parasites on Indian Major Carp, <i>Labeo rohita</i> ( Ham.) with reference to abundance and pathophysiology.: Global J. for Research Analysis, 3(7): 134-136 Impact Factor 1.548, ISSN(Online): 2277-8160 (International)
14.	Mondal, A. Banerjee, S. Patra, A. Adikesavalu, H. Kurva, R. R. Dash, G. Joardar S. N. & Abraham, T. J. (2014) Molecular and morphometric characterization of <i>Thelohanellus caudatus</i> (Myxosporea: myxobolidae) infecting the caudal fin of <i>Labeo rohita</i> .: Protistology, 41-52. Impact Factor: 1.508 ISSN 1680-0826 (International)
15.	Sharma, B. B. Borah, D. & Dash, G. (2014) Aquaculture Disease Management Strategies Adopted by Fish Farmers of Nagaon District in Assam, India.: J. of Chem., Biol. and Phys. Sc, 2227-2233. ICV: 5.46 GIF: 0.68 E-ISSN:2249-1929 (International)
16.	Sharma, B. B. Dash, G. Alam, S & Chakraborty, D. (2014) Effects of Water Borne Iron on Toxicity and Pathophysiology of Indian Major Carp – A Review.: Global J.for Research Analysis, 3(6): 213-215. Impact Factor 1.548, ISSN (Online): 2277-8160 (International)
17.	Dash, G. Majumder, D & Kurva, R. R. (2014) Prevalence of Parasites in fresh water exotic carps of West Bengal.: Agric. Biol. Res. 30(2), 141-155. Impact Factor (1.325): ISSN-0970-1907. NAAS Rating 3.86
18.	Adikesavalu, H., Patra, A., Banerjee, S., Sarkar, A. and Abraham, T.J., 2015. Phenotypic and molecular characterization and pathology of <i>Flectobacillus roseus</i> causing flectobacillosis in captive held carp <i>Labeo rohita</i> (Ham.) fingerlings. Aquaculture, 439: 60-65. doi:10.1016/j.aquaculture.2014.12.036. NAAS Rating 7.83.
19.	Alam, Sk. S., Joardar, S.N., Panigrahi, A.K., Abraham, T.J., Mukherjee, S. and Mukherjee, A. 2014. Immunobiochemical characteristics of purified native leptin protein from Indian major carp, rohu ( <i>Labeo rohita</i> Ham.). <i>Open Journal of Immunology</i> , 4: 139-147. <a href="http://dx.doi.org/10.4236/oji.2014.44016">http://dx.doi.org/10.4236/oji.2014.44016</a>
20.	Joardar, S.N., Abraham, T.J. and Mandal, N. 2014 Indian minor carp <i>Labeo bata</i> (Ham.) elicits more cellular immune effector activities than India major carp <i>Labeo rohita</i> (Ham.) and <i>Catla catla</i> (Ham.). <i>Indian J. Anim. Health</i> , 53(1):9-14. NAAS Rating 2.08





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

21.	Ezung, R. and Abraham, T.J. 2014. Assessment of bacterial contamination and antibiotic resistance patterns among <i>Escherichia coli</i> in finfishes of Kolkata, India. <i>Fish Technol.</i> 51: 199-206. NAAS Rating 4.87
22.	Abraham, T. J. 2014. Effect of polyculture of shrimp with fish on luminous bacterial growth in grow-out pond water and sediment. <i>J. Coastal Life Medicine</i> , 2(6): 451-454.
23.	Adikesavalu, A., Patra, A., Mondal, A. Banerjee, S. and Abraham, T.J. 2014. Association of <i>Aeromonas salmonicida</i> subsp. <i>achromogenes</i> in the haemorrhagic blister of cultured carp <i>Cyprinus carpio</i> in West Bengal, India. <i>Asian Pacific J. Trop. Dis.</i> , 4 (Suppl 1): S500 – S504.
24.	Abraham, T. J. and Sasmal, D. 2014. Multiple antibiotic resistance in planktonic luminous bacteria of Indian penaeid shrimp farms. <i>J. Sci. Res.</i> , 6(1): 153-159.

### G.2.3. Department of Aquatic Environment Management

Sl. No.	Scientific Research Publication in Journals
1.	Sangita Das, Surya Kanta Sau, M.Dasgupts and R.K.Trivedi (2014) Fluctuations of Plankton Population in Ox-Bow Lake in Nadia District (West Bengal). <i>J.Inland Fish. Soc. India</i> . 446(1): 76-83.
2.	Dubey SK, Trivedi RK, Rout SK, Chand BK and Choudhury A. (2014).Median Lethal Salinity (MLS <sub>96h</sub> ) of Two Small Indigeneous Fish Species <i>Amblypharyngodon mola</i> and <i>Pethia ticto</i> from Indian Sundarban. <i>J.Aquac Res Development</i> . 5.5
3.	Sourabh Kumar Dubey, Raman Kumar Trivedi and Bimal Kinkar Chand (2015). Indigeneous Freshwater Piscine Resources of Indian Sundarban Biosphere Reserve: Status and Prospects. <i>World Journal of Fish and Marine Sciences</i> 7(1): 21-28.

### G.2.4. Department of Fishery Economics & Statistics

Sl. No.	Scientific Research Publication in Journals
1.	Studies on Faunal Biodiversity and their Impact on Livelihood in Indin Sunderban Area, Ashis Kumar Panigrahi, Somsuvra Dasgupta and A. Mondal, ISSN: 2349-5626 Bioglobia:, Vol.1(2): 2014 Issue, 2014, pp.67-73. NAAS Rating - 2.5

### G.2.5. Department of Fishery Engineering

Sl. No.	Scientific Research Publication in Journals
1.	Talwar, N.A.(2014). Predicative factors Associated with knowledge level of members of fishermen's cooperative societies in Uttar Pradesh, <i>Journal of Interacad</i> , pp474-479. . NAAS Rating - 2.34
2.	Talwar, N.A.(2014). Socio-Economic evaluation of self-help group members associated with ornamental fish culture in West Bengal, <i>Journal of Interacad</i> , 480-487. . NAAS Rating - 2.34

### G.2.6. Department of Fishery Extension

Sl. No.	Scientific Research Publication in Journals
1.	Basu, S. K., Dana, S. S., Ghosh, A., Bandyopadhyay, U. K. and Talwar, A. (2014) Socio-Economic Evaluation Of SHG Members Associated With Ornamental Fish Culture In West Bengal. <i>Journal of Interacademia</i> . 18 (3): pp. 480-487.
2.	Chandra, P., Dana, S. S., Ghosh, A., Talwar, A. and Bandyopadhyay, U. K. (2014) Predictive Factors Associated With Knowledge Level of Members of Fishermen's' Cooperative Societies' in Uttar Pradesh. <i>Journal of Interacademia</i> . 18 (3): pp. 474-479.

## PUBLICATION ON RESEARCH FINDINGS (Contd...)

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| 3. | Dana, S.S., Das, S.K., Mazumder, C. and Ghosh, A. (2014) Mud Crab Farming in West Bengal: A Way for Achieving Sustainable Future in Nutritional Security. Second International Conference on "Mother Earth (ICME II): Save It to Achieve a Sustainable Future for All" at University of Burdwan, W.B. p. 100. |
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**G.2.7. Department of Fish Processing Technology**

Sl. No.	Scientific Research Publication in Journals
1.	Swarnadyuti Nath, S.Chowdhury, Prof.K.C.Dora and S.Sarkar. (2014) Role of Biopreservation in Improving Food Safety and Storage, International Journal of Engineering Research and Application, ISSN: 2248-9622, Vol.4, Issue 1 (Version 3), pp.26-32.
2.	P.K.Das, S. Sarkar, K.C.Dora S.Chowdhury and S. Ganguly (2014). Effect of gutting and filleting on keeping quality of rohu ( <i>Labeo rohita</i> ) at refrigerated temperature ( $4\pm 1^{\circ}\text{C}$ ), Indian Journal of Animal Health, ISSN: 0019-5057, Vol.53(1), June 2014, pp.27-34. NAAS Rating - 2.08
3.	S Nath*, S.Chowdhury and K.C. Dora. (2014). Effect of lactic acid bacteria application on shelf life and safety of fish fillet at $6\pm 1^{\circ}\text{C}$ , International Journal of Advanced Research, ISSN 2320-5407, Vol. 7(4). April 2014. 201-207
4.	Tanushri Ghoroi, Sreekanta Sarkar, K.C Dora and S. Chowdhury.(2015). Proximate composition Analysis of Shrimp head Waste (SHW) Fermented by Conventional and Biofermenter methods, , Environment and Ecology, ISSN 0970-0420, VOL 3 (1) : 74-77, March 2015. NAAS Rating - 4.09.
5.	D.Kamilya, A.Baruah, T.Sangma, S.Chowdhury and P.Pal (2015). Inactivated Probiotic Bacteria Stimulate Cellular Immune Responses of Catla, <i>Catla catla</i> (Hamilton) In Vitro, Probiotics and Antimicrobial Proteins, ISSN 1867-1306, DOI 10.1007/s12602-015-9191-9, March 2015. Springer.

**G.2.8. Department of Fishery Resources Management**

Sl. No.	Scientific Research Publication in Journals
1.	Roy Choudhury, S., Das, S.K., Sahoo, A.K. and Behera, B.K. (2014): Length-weight relationship and relative condition of <i>Notopterus notopterus</i> (Pallas) from east Kolkata wetlands, West Bengal. <i>J. Inland Fish. Soc. India</i> , 45(2):47-49. NAAS Rating - 4.15.
2.	Gogoi, R., Behera, S., Das, P., Meena, D.K. & Behera, B.K. (2014) : Effect of Methyl testosterone ( $17\alpha$ MT) on phenotype, bioindices and gonads of adult male dwarf gouramy <i>Colisa lalia</i> . <i>J. Food Agriculture</i> , 26(5):459-464. NAAS Rating - 5.34.





## PUBLICATION ON RESEARCH FINDINGS (Contd...)

### G.3. RESEARCH PUBLICATIONS OF FACULTY OF DAIRY TECHNOLOGY

#### G.3.1. Department of Dairy Chemistry

Sl. No.	Scientific Research Publication in Journals
1.	P.R.Ray and P.K.Ghatak.2014. Lactoferrin: A potential bioactive antioxidant of milk. <i>Indian Food Industry</i> . Vol. 33 No 2, Mar-Apr 2014. ISSN: 0972-2610
2.	C.Chakraborty, P.R.Ray, A.K.Bandyopadhyay and P K Ghatak (2014). Herbs and Spices as natural food additives. <i>Indian Dairyman</i> . August 2014. P76-81. ISSN: 0019-4603
3.	A.Gupta, P.K.Ghatak, P.R.Ray and A.K.Bandyopadhyay (2014). Effect of addition of carrot juice and stabilizer on the acceptability of <i>Lassi</i> . <i>Beverage and Food World</i> . 41(7): 32-34. ISSN: 0970-6194
4.	A. Bera , P.K. Ghatak, P.R.Ray and A.K.Bandyopadhyay (2014). A study on the preparation of <i>Paneer</i> from admixture of cow milk and ground nut milk. <i>Beverage and Food World</i> . 41(7): 48-50. ISSN: 0970-6194

### G.4. RESEARCH PUBLICATIONS OF DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Sl. No.	Scientific Research Publication in Journals
1.	Dubey, S.K., Trivedi, R.K., Rout, S.K., Chand, B. K. and Chaudhury, A. (2014). Median Lethal Salinity (MLS <sub>96h</sub> ) of two small indigenous fish species <i>Amblypharyngodon mola</i> and <i>Phethia ticto</i> from Indian Sundarban. <i>J. of Aqua. Res. And Dev.</i> , Vol. 5 (5).
2.	Dubey, S.K., Trivedi, R.K. and Chand, B. K (2015). Indigenous Freshwater Piscine Resources on Indian Sundarban Biosphere Reserve: Status and Prospects. <i>World J. of Fish and Marine Sciences</i> , 7 (1): 21-28.

## **H HUMAN RESOURCE DEVELOPMENT (HRD)**

The West Bengal University of Animal & Fishery Sciences always encourages its faculty members and scientists for interaction and collaboration with the scientists from other institutes within the State, Country and other countries to strengthen its basic, applied and strategic research in the fields of Veterinary and Animal Sciences, Dairy Technology and Fishery Sciences. The faculty members and scientists of the University participate in different conferences, training programmes, summer school, short courses on various aspects, seminars, symposiums, workshops etc to be updated with the latest scientific knowledge and technologies. This effort of the University in the Human Resource Development is briefly depicted below :

### **H.1. PARTICIPATION OF THE TEACHERS / SCIENTISTS/ OFFICERS IN THE SEMINAR, SYMPOSIUM, WORKSHOP, TRAINING PROGRAMMES ETC.**

#### **H.1.A. FACULTY OF VETERINARY & ANIMAL SCIENCES**

##### **H.1.A.1. Department of Animal Genetics & Breeding**

<b>Name of the faculty member with Designation</b>	<b>Title of Seminar, Symposium, Workshop, Training attended</b>	<b>Venue</b>	<b>Duration (Dates)</b>
Dr. Manoranjan Roy, Lecturer	Brain Storming Session on Breeding policy for the dairy herd maintained at Eastern Regional Station of NDRI, Kalyani.	Eastern Regional Station of NDRI, Kalyani	1 day 28/10/2014
	Advances in Livestock Production Management Technologies" on Breeding policy of goat and sheep under different agro-climatic zones of India.	Indian Veterinary Research Institute, Eastern Regional Station	1 day 20/11/2014
	Process of Improvement in Goat Rearing, Techniques & Strategies towards Livelihood Generation in Red Lateritic Zone of West Bengal.	Kotulpur, Dist-Bankura, West Bengal (under ARD Department)	1 day 11/12/2014
	Live Phone in programme "Krishidarshan" on "increasing milk production & Feed management".	Doordarshan Bhavan, 18/3, U.S Sarani, Golf Green, Kolkata-700095. Prasar Bharati, India's Public Service Broadcaster, Doordarshan Kendra: Kolkata.	1 day 05/06/2014
	"e-learning Portal on Agricultural Education(e-Krishi Shiksha)	WBUAFS, Belgachia, Kolkata 37.	1 day 21/01/2015





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. Uttam Sarkar	"Brain Storming Session on Breeding policy for the dairy herd maintained at Eastern Regional Station of NDRI, Kalyani".	Eastern Regional Station of NDRI, Kalyani	1 day 28/10/2014
	Short Term Training Course on "Advances in Livestock Production Management Technologies" Presentation on "Breeding strategies and policy for genetic improvement of cattle and buffaloes in different agro-climatic regions of India"	Indian Veterinary Research Institute, Eastern Regional Station	14 days 12/11/2014 to 25/11/2014
	North-East Regional Training & Awareness workshop on J-gate@ CERA.	National Resource Centre on Pig, Rani, Guwahati, Assam.	1 day 19/11/2014
	Training on "Recent Advances in Statistical Genetics" under CAFT	IASRI, Library Avenue, Pusa, New Delhi	21 days 03/02/2015 to 23/02/2015

### H.1.A.2. Department of Animal Nutrition

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Amlan Kumar Patra, Lecturer.	Animal Nutrition Association, Biennial conference on 'Nutrition Health Interactions or Optimum Livestock Production and Human Welfare'	Assam Agricultural University	3 days 22/01/2015 to 24/01/2015.
Dr. G.P. Mandal, Lecturer (Sr. Scale)	Animal Nutrition Society conference	Bangaluru	3 days 20/04/14 to 22/04/14
	Animal Nutrition Association conference	Guwahati	3 days 22/01/15 to 24/01/15
	Amoril as an alternative to AGP in poultry and swine	Yangon, Myannmmar	3 days 23/09/14 to 25/09/15
Dr. Paresht Nath Chatterjee, Assistant Professor	Winter school on 'Whole Genome analysis and Functional "Omics" Technologies for future Designer Milk Food".	NDRI Karnal	21 days 28/10/2014 to 17/11/2014.
	ANACON 2015 on Eco responsive feeding & Nutrition: Linking Livestock & Livelihood.	Guwahati Assam.	3 days 22/01/2015 to 24/01/2015
	GLANCE 2014	NIANP Bangalore	3 days 16/04/2014 to 18/04/2014

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### H.1.A.3. Department of Instructional Livestock Farm Complex

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. M.C. Pakhira, Asst. Professor	Global Animal Nutrition Conference (GLANCF-2014)	NIANP, Bangaluru.	3 days 20/01/2014 to 22/04/2014
	Workshop on 'Methods of applied livestock Research: Treatments, design implementation, analysis, interpretation & publication'	WBUAFS	1 day 15/05/2014
	Workshop on 'Role of CPCSEA in Animal Welfare'	WBUAFS	1 day 02/08/2014
	Winter School on 'Advanced Extension Strategy for communication and management skill for extension personal: The approach, Methodology and application'	BCKV, Mohanpur, Nadia to 23/12/14	21 days 03/12/14
Dr. Aruna Pal Asst. Professor	XII Agricultural Science Congress on Sustainable Livelihood Security for Small Holder Farmers	NDRI, Karnal	4 days 03/02/2015 to 06/02/2015
	International Symposium on Sustainable management of Animal Genetic resources for Livelihood security in Developing countries	Madras Veterinary College, TANUVAS, Chennai	2 days 13/02/2015 to 14/02/2015
Mr. D.C.Roy Asst. Professor	Workshop 'Methods of applied livestock Research: Treatments, design implementation, analysis, interpretation & publication'	WBUAFS	1 day 15/05/2014
	National Conference on 'Environmental Issues and Food Security in India: Let's voice together towards a sustainable future'	Jute Tech. Institute, Kolkata	1 day 10/08/2014
	International Seminar on 'Integrating Agriculture and allied Research: Prioritizing Future Potentials for Secure Livelihood (ISIAAK)'	BCKV, Kalyani	4 days 6/11/2014 to 09/11/2014
	National Symposium on 'Climate Resilient Forage Production and its Utilization'	BCKV, Kalyani	4 days 13/11/2014 to 14/11/2014
	International Conference on 'Environment and Ecology (ICFE 2015)'	Science city, Kolkata	3 days 02/03/2015 to 04/03/2015





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

	Winter School on 'Advanced Extension Strategy for communication and management skill for extension personal: The approach, Methodology and application'	ECKV, Mohanpur, Nadia	21 days 03/12/2014 to 23/12/2014
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### H.1.A.4. Department of Livestock Production Management

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr S Bera Asst. Professor	Preparation of sustainable bankable project on Animal Husbandry (As expert)	Office of Co-operative Management, Jalpaiguri	2 Days 05/05/2014 to 05/05/2014
	Methods of Applied Livestock Research: Treatments, Design, Implementation, Analysis, Interpretation and Publication	Dept. of Animal Nutrition, WBUAFS	1 Day 15/05/2014
	Piggery Management (As expert) Agricultural Training Centre,	Narendrapur	1 Day 08/08/2014
	National conference on Environmental Issues and Food Security in India (Oral Presentation)	Institute of Jute Technology, University of Calcutta	1 Day 10/08/2014

### H.1.A.5. Department of Livestock Products Technology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Gopal Putra, Asstt. Professor	VI Conference of Indian Meat Science Association (IMSACON-VI) and National Symposium on Sustainable Meat Production for Nutritional Security and Consumer well-being: Challenges and Strategies.	DUVA&U, Mathura, U.P	3 Days 28/11/2014 to 30/11/2014
Debashis Bhattacharyya	IIGC sponsored Refreshers course	ASC, University of Burdwan	21 days 10/03/2015 to 30/03/2015

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

## H.1.A.6. Department of Teaching Veterinary Clinical Complex

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr D Ghosh Assoc. Prof.	UGC Sponsored Orientation course	Jadavpur University	30 Days 15/12/2014 to 13/01/2015
	XXXVIII Annual congress of ISVS and International Symposium on New horizons of Camel surgery and Large ruminant surgery.	RAJUVAS, Bikaner, Rajasthan	3 days 15/10/2014 to 17/10/2014
	Seminar on "e-learning portal on agricultural education.	DREF, WBUAFS, Belgachia	1 day 02/08/2011
	XI Annual convention of Indian society for advancement of canine practice.	Bihar veterinary College, Patna	3 days 10/02/2014 to 12/02/2014
Dr. S. S. Kesh Asst. Prof.	Workshop on " Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 02/08/2014
	Annual State conference on "Newer Avenues in Pharmacological Research"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 06/02/2015
Dr. S. Chaudhuri Asst. Prof.	Workshop on " Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 02/08/2014
	Pre-conference workshop in the 6 <sup>th</sup> East zonal and 24 <sup>th</sup> Annual Conference on Indian Pharmacological Society, West Bengal branch on Xneobiotic in biological matrix	Pharmacology deptt. WBUAFS, Belgachia.	1 day 05/02/2015
Dr P Mukherjee Asst. Prof.	Workshop on " Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 02/08/2014
	Pre-conference workshop in the 6 <sup>th</sup> East zonal and 24 <sup>th</sup> Annual Conference on Indian Pharmacological Society, West Bengal branch on Xneobiotic in biological matrix	Pharmacology deptt. WBUAFS, Belgachia.	1 day 05/02/2015





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### H.1.A.7. Department of Veterinary Anatomy & Histology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof S.Ray Professor	19 <sup>th</sup> Annual conference of Anatomical society of India (WB Chapter)	SSKM, Kolkata	1 Day 19/01/2015
Dr Partha Das Associate Professor	19 <sup>th</sup> Annual conference of Anatomical society of India (WB Chapter)	SSKM, Kolkata	1 Day 19/01/2015
	29 <sup>th</sup> Annual conference of Indian Association of Veterinary Anatomists	CVSC&AH, Durg	3 days 8/02/2015 to 11/02/2015

### H.1.A.8. Department of Veterinary Biochemistry

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Subhasis Batabyal, Associate Professor	11 <sup>th</sup> Conference of Association of Public Health Veterinarians on "Food Security and Public Health: Present status and future road map"	NASC Complex, New Delhi	2 days 24/11/2014 to 25/11/2014
	'Newer Avenues in Pharmacological Research' 6 <sup>th</sup> East Zone and 24 <sup>th</sup> Annual State Conference of Indian Pharmacological Society, West Bengal Branch	Department of Veterinary Pharmacology and Toxicology, WBUTAFS	1 Day 06/02/2015

### H.1.A.9. Department of Veterinary Epidemiology & Preventive Medicine

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Chanchal Guha (Professor)	Food security and public health-Present status and future road map	NASC Complex, New Delhi	2 days 24/11/2014 to 25/11/2014
Dr. Chanchal Guha (Professor) Dr. Ujjwal Biswas (Assoc. Professor)	New dimensions in veterinary medicine, technological advances, one health concept and animal welfare concerns	College of V&AS Pookode, Kerala	3 days 22/01/2015 to 24/01/2015
Dr. Ujjwal Biswas (Assoc. Professor)	Newcastle Disease Control Review Workshop: Controlling Newcastle Disease in Africa and South Asia organized by Global Alliance for Livestock Veterinary Medicines (GALVmed)	Ranchi, Jharkhand	3 days 12/03/2015 to 14/03/2015

**HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)****H.1.A.10. Department of Veterinary Gynaecology & Obstetrics**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr.(Mrs.) Kalyani Ray, Associate Professor	Newer avenues in Pharmacological Research	Department of Veterinary Pharmacology & Toxicology, WBIAFS, Kolkata	2 days 05/02/2015 to 06/02/2015
	Methods of Applied Livestock Research: Treatments, Design, Implementation, Analysis, Interpretation, and Publication.	Department of Animal Nutrition, WBIAFS Belgachia, Kolkata	1 day 15/05/2014
	Role of CPCSEA in Animal Welfare	Department of Veterinary Pharmacology & Toxicology, WBIAFS, Kolkata	1 day 02/08/2014
Dr. Pramod Ranjan Nandi, Senior Lecturer	National Symposium & Annual convention of Indian Society for Study of Animal Reproduction.	Mathura, U.P.	3 days 20/11/2014 to 22/11/2014

**H.1.A.11. Department of Veterinary Medicine, Ethics & Jurisprudence**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Chandan Lodh, Associate Professor	11 <sup>th</sup> National Symposium of the Indian Society for Advancement of Canine Practice held at Patna, 2014.	Patna	3days
	National congress on veterinary Public Health/ Food security and public health : present status and future Road Map	New Delhi	2days 24/11/2014 to 25/11/2014
Prof.N.R. Pradhan,	11 <sup>th</sup> National Symposium of the Indian Society for Advancement of Canine Practice held at Patna, 2014.	Patna	3days
	11 <sup>th</sup> convention of Association of Public Health Veterinarians	New Delhi,	November, 2014





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### H.I.A.12. Department of Veterinary Microbiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. S.N. Joardar, Associate Professor	Workshop on 'Methods of Applied Livestock Research: Treatments, design, Implementation, analysis, interpretation and publication'	Department of Animal Nutrition, WBUAFS	1 day 15/05/2014
	Summer Training Programme on Environment as a part of World Environment Day Celebration, 2014	Govt. college of Engineering and Ceramic Technology, Belegghata, Kolkata	1 day 5/6/2014
	Seminar on Japanese encephalitis, organized by Teacher's Association, WBUAFS	WBUAFS campus, Kolkata	1 day 8/8/2014
	Training Programme for Veterinarians and Officers, organized by Office of Dy. Director, Burdwan, ARD, Govt. of W.B.	Parishad Office, ARD, Burdwan	1 day 8/8/2014
	Seminar on Avian Influenza & other zoonotic diseases for school students and training of para-vets, organized by Office of Dy. Director, Murshidabad, ARD, Govt. of W.B.	Parishad Office, ARD, Murshidabad	2 days 12/8/2014 to 13/8/2014
	UGC sponsored national level seminar entitled "Frontiers of Microbiology: prospects and challenges"	R.K. Vidyamandir, Belur math, Howrah	2 days 20/11/14 to 21/11/14
	National conference on emerging and re-emerging viral outbreaks in India-clinical challenges and management	CSIR-IICT-CCMB auditorium, Hyderabad	3 days 20/1/2015 to 22/1/2015
	National Seminar on Biophysical Environment & Human Interaction, organized by Bangiyo Bhugol Mancha	Rajabazar Science College, Kolkata	2 days 21/2/2015 to 22/2/2015
	National Science Day celebration, organized by Teachers' Association, WBUAFS	WBUAFS campus, Kolkata	1 day 27/1/2015
	Seminar on Swine Flu, organized by Teacher's Association, WBUAFS	WBUAFS campus, Kolkata	1 day 14/03/2015
	Seminar on "Pandemic Influenza (H1N1) 2009", org. by Association of Public Health Veterinarians and WBUAFS.	WBUAFS, Belgachia	1 day 12/03/2015
	Seminar on Animal Husbandry	RKM Ashram, Sargachi, Murshidabad	1 day 25/3/2015

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. Indranil Samanta, Assistant Professor	International Conference on "Challenges and opportunities in animal health at the face of globalization and climate change" and XXVIII Annual Convention of Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases (IAVMI)	DUVASU, Mathura	3 days 30/10/2014 to 01/11/2014
	UGC sponsored national level seminar entitled "Frontiers of Microbiology: prospects and challenges"	R.K. Vidyamandir, Belur math	2 days 20/11/2014 to 21/11/2014
	Annual State Conference of Indian Pharmacological Society (West Bengal branch)	Department of Veterinary Pharmacology, WBUAFS	2 days 05/02/2015 to 06/02/2015
	Workshop on 'Methods of Applied Livestock Research: Treatments, design, implementation, analysis, interpretation and publication'	Department of Animal Nutrition, WBUAFS	1 day 15/05/2014
	Workshop on 'Culture of responsibility, Pathogen Inventory Management and Fundamentals of working with biosafety cabinets'	National Institute of High security Animal Diseases, Bhopal	2 days 13/03/2015 to 14/03/2015
	Awareness programme on 'Current regulatory requirements for members of Institutional Ethics Committee'	B.M. Birla Heart research Centre, Kolkata	2 days 26/02/2015 to 27/02/2015
	Training on ELISA for poultry diseases	Idexx Poultry Academy, Kolkata	2 days 20/06/2014 to 21/06/2014
Dr. Samir Dey, Assistant Professor	Seminar on Japanese encephalitis, organized by Teacher's Association, WBUAFS	WBUAFS campus, Kolkata	1 day 8/8/2014
	Workshop on 'Methods on applied livestock research: Treatments, design, implementation, analysis, interpretation and publication'	Dept. of Animal Nutrition, WBUAFS	1 day 15/05/2014
	Workshop on "Role of CPCSEA in animal welfare" organised by CPCSEA, Animal Ethics Society of India, Indian Pharmacological society and WBUAFS.	Dept. of Pharmacology and Toxicology, WBUAFS	1 day 02/08/2014
	UGC sponsored national level seminar entitled "Frontiers of Microbiology: prospects and challenges"	R.K. Vidyamandir, Belur math	2 days 20/11/2014 to 21/11/2014
	Awareness seminar on "E-learning Portal Agricultural Education (e-Krishi Siksha)"	NISAGENET Cell, WBUAFS	1 day 21/01/2015
	Seminar on "Present trend in poultry management"	WB. Veterinary Council, Kolkata	1 day 25/02/2015
	Seminar on "Pandemic Influenza (H1N1) 2009", org. by Association of Public Health Veterinarians and WBUAFS.	WBUAFS, Belgachia	1 day 12/03/2015





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. Kunal Batabyal, Assistant Professor	Orientation Programme, org. by UGC, Academic Staff College, The University of Burdwan	University of Burdwan	28 days 04/07/2014 to 31/07/2014
	Workshop on "Role of CPCSEA in Animal Welfare", org. by CPCSEA, Animal Ethics Society of India, Indian Pharmacological Society and WBUAFS.	WBUAFS, Belgachia	1 day 02/08/2014
	Workshop on "Methods of Applied Livestock Research: Treatments, Design, Implementation, Analysis, Interpretation and Publication", org. by WBUAFS and American Institute for Goat Research, Langston Univ., USA.	WBUAFS, Belgachia	1 day 15/05/2014
	Seminar on "Japanese Encephalitis", org. by Teachers' Association, WBUAFS and The Science Association of Bengal.	WBUAFS, Belgachia	1 day 06/08/2014
	Seminar on "Frontiers of Microbiology: Prospects and Challenges", org. by Ramkrishna Mission Vidyamandira and CSIR-IICB, Kolkata.	Ramkrishna Mission Vidyamandira, Belur	2 days 20/11/2014 to 21/11/2014
	Seminar on "e-learning Portal on Agricultural Education (e-Krishi Shiksha)", org. by NISAGENET CELL, DREF, WBUAFS.	WBUAFS, Belgachia	1 day 21/01/2015
	6 <sup>th</sup> East Zonal and 24 <sup>th</sup> Annual State Conference of Indian Pharmacological Society, West Bengal on "Newer Avenues in Pharmacological Research", org. by WBUAFS, Kolkata.	WBUAFS, Belgachia	
	14 <sup>th</sup> World Congress on Public Health, org. by WHO, South-East Asia Regional Office, Delhi	Science City, Kolkata	5 days 11/02/2015 to 15/02/2015
	Seminar on "Pandemic Influenza (H1N1) 2009", org. by Association of Public Health Veterinarians and WBUAFS.	WBUAFS, Belgachia	1 day 12/03/2015

**HUMAN RESOURCE DEVELOPMENT (HRD)** (Contd...)**H.1.A.13. Department of Veterinary Parasitology**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. S.C. Mandal Dr. S. Baidya and Dr. S. Pandit.	International Workshop on "Methods of Applied Livestock Research: Treatments, Design, Implementation, Analysis, Interpretation and Publication"	Department of Animal Nutrition, WBUAFS	1 day 15/05/2014
Dr. S. Baidya	Japanese Encephalitis	VCI Seminar Hall, Kolkata	1 day 06/08/2014
Prof. S.C. Mandal	National Veterinary Physiology Quiz : Zonal Level Competition (Eastern Zone)	RKVY Seminar Hall, WBUAFS	1 day 15/09/2014
Dr. S. Baidya	National Congress on Public Health	NASC complex, New Delhi	2 days 21/11/2014 to 25/11/2014
Dr. R. Jas	56 <sup>th</sup> Orientation Programme	Jadavpur University, Salt Lake campus	27 days 02/02/2015 to 28/02/2015
Dr. S. Pandit	Present Trend in Poultry management		1 day 25/02/2015
Dr. S. Baidya	National Science day 2015 celebration	Farmer's Hostel, WBUAFS	1 day 27/02/2015
Prof. J.D. Ghosh, Prof. S.C. Mandal, Dr. R. Jas and Dr. S. Pandit	Pandemic Influenza (H1N1)-2009	Farmer's Hostel, WBUAFS	1 day 12/03/2015
Dr. S. Baidya	Pandemic H1N1 flu & Osteoarthritis Problems in Elderly	VCI Seminar Hall, Kolkata	1 day 14/03/2015

**H.1.A.14. Department of Veterinary Pathology**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. S.K. Mukhopadhyay, Dr. N.C. Patra.	11 <sup>th</sup> World Congress on Public Health	Kolkata	5 days 11/02/2015 to 15/02/2015
Dr. R.N. Hansda Dr. S. Pradhan	Current Regulatory Requirements for Members of Institutional Ethics Committee organized by Clinical Development Service Agency (CDSA), India	Kolkata	2 days 26/02/2015 to 27/02/2015





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr R.N Hansda Dr S. Pradhan Dr. S.K. Mukhopadhyay, Dr N.C. Patra.	Methods of Applied Livestock Research: Treatments, Design, Implementation, Analysis, Interpretation, and Publication"	W.B.U.A.F.S Kolkata, W.B	1 day 15/05/2014
Dr R.N Hansda Dr S. Pradhan Dr N.C. Patra.	Seminar on Japanese Encephalitis	The science Association of Bengal	1 day 06/08/2014
Dr. S.K. Mukhopadhyay	NEC meeting of AIFUCTO	IACS, Kolkata	1 day 21/09/2014
Dr. S.K. Mukhopadhyay, Dr R.N Hansda	Veterinary Pathology Congress 2014  V <sup>th</sup> Annual meet of Indian College of Veterinary Pathologist  National symposium on "Impact of climate change on pathobiology of disease of animals, poultry and fish"	Deptt. of Pathology, CVSc & AH, AAU & IAVP	3 days 13/11/2014 to 15/11/2014
Dr S. Pradhan Dr. S.K. Mukhopadhyay,	Scientific Seminar on Pandemic H1N1 Flu and osteoarthritis problem in elderly	WBVA and Teacher's Association, WBUAFS	1 day 14/03/2015

### H.1.A.15. Department of Veterinary Pharmacology & Toxicology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. T.K. Sar	11 <sup>th</sup> Conference of Association of Public Health Veterinarians	NASE Complex, New Delhi	2 days 24/11/2014 to 25/11/2014
Dr. T.K. Sar Prof. T.K. Mandal	Opportunities in Medicinal plant research	Gandhi Bhawan, Jadavpur University, Kolkata	2 days 29/11/2014 to 30/11/2014
Dr. T.K. Sar	47 <sup>th</sup> Annual Conference of Indian Pharmacological Society	Guwahati Medical College, Guwahati	3 days 28/12/2014 to 30/12/2014
Dr. T.K. Sar	6 <sup>th</sup> East Zonal & 24 <sup>th</sup> Annual State Conference of Indian Pharmacological Society, West Bengal	Dept. of Veterinary Pharmacology & Toxicology, WBUAFS, Belgachia, Kolkata	2 days 06/02/2015 to 07/02/2015
Dr. T.K. Sar	Workshop on "Methods of applied livestock research : Treatments, design Implementation, analysis, interpretation and publication"	Dept. of Animal Nutrition, WBUAFS, Belgachia, Kolkata	1 day 15/05/2014

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. T.K. Sar	Workshop on "Level II – Explore of IDEXX poultry academy for INDIA"	Kolkata	2 days 20/06/2014 to 21/06/2014
Dr. T.K. Sar	Workshop on "Role of CPCSEA in Animal Welfare"	Dept. of Vety. Pharmacology and Toxicology, WBUAFS, Kolkata	1 day 02/08/2014
Prof. T.K. Mandal	24 <sup>th</sup> Annual Conference of Indian Pharmacological Society (IPS)	Cuttack Medical College, Odisha	2 days 08/11/2014 to 09/11/2014
Prof. T.K. Mandal	Symposium on "Drug Analysis and Therapeutic Drug Monitoring"	Calcutta School of Tropical Medicine, Kolkata	1 day 11/11/2014
Prof. T.K. Mandal Dr. T.K. Sar	47 <sup>th</sup> Annual Congress of Indian Pharmacological Society (IPS)	Guwahati Medical College, Guwahati	3 days 28/12/2014 to 30/12/2014
Dr. T.K. Sar	Pre-conference Workshop of 6 <sup>th</sup> East Zonal and 24 <sup>th</sup> Annual State conference of IPS, West Bengal branch	Dept. of Vety. Pharmacology and Toxicology, WBUAFS Mohanpur, Nadia	1 day 05/02/2015
Dr. T.K. Sar	Workshop on "Current regulatory requirements for members of Institutional Ethics Committee"	B.M. Birla Heart Research Centre, Kolkata	2 days 26/02/2015 to 27/02/2015
Prof. T.K. Mandal	2 <sup>nd</sup> International Congress of Society for Ethnopharmacology	Dept. of Pharmaceutical Science, RTM Nagpur University, Nagpur	3 days 20/02/2015 to 22/02/2015
Prof. T.K. Mandal	Meeting about modification of Pharmacology syllabus of VCI	Mathura Veterinary College	2 days 10/03/2015 to 11/03/2015

### H.1.A.16. Department of Veterinary Physiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Pradip Kumar Das, Dr. Dipak Banerjee and Dr. J Mukherjee	National Symposium on 'Physiological Determinants of Climate Resilient and Sustainable Animal Production'	Central Institute for Research on Buffaloes, Hisar, Harayana	2 days 27/11/2014 to 28/11/2014
Dr. D Banerjee and Dr. J Mukherjee	56 <sup>th</sup> UGC sponsored orientation programme	Academic Staff College, Jadavpur University, Kolkata	28 days 02/12/2014 to 28/12/2014





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### II.1.A.17. Department of Veterinary Public Health

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. C. Debnath, Assistant Professor Dr. A.K. Pramanik, Professor (contractual)	11 <sup>th</sup> National Conference of the Association of Public Health Veterinarians (APHV) and National Symposium on "Food Security and Public Health: Present Status and Future Road Map"	NAS Complex, New Delhi	2 Days 24/11/2014 to 25/11/2014
Dr. C. Debnath, Assistant Professor	Capacity building workshop on Diagnosis of Leptospirosis in humans and animals"	Zoonosis Research Laboratory, Center for Animal Health Studies, TANUVAS, Madhavaram Milk Colony, Chennai- 600 051	3 days 28/02/2015 to 02/03/2015

### H.1.A.18. Department of Veterinary Surgery & Radiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr Sarbani Hazra	World Ophthalmology Congress. Oral Presentation	Convention centre Tokyo	5 days 02/04/2014 to 06/04/2014
	INDO-US, Workshop on Nanoengineering in medicine.	AIIMS New Delhi	3 days 17/12/2014 to 19/12/2014
	Invited lecture India US UK symposium, Dept of Biotechnology, IIT Kharagpur	IIT, Kharagpur	1 Day 23/12/2014
	Invited Lecture, UGC sponsored workshop on scanning electron microscopy, Burdwan University	Burdwan University	1 day Oct 2014
Dr. S. K. Guha	National Training programme on "Imaging and Minimally invasive diagnostic techniques in farm and pet animal practice.	VMEJ, Deptt, Madras Veterinary College, Chennai	21 days 5/11/2014 to 25/11/2014
	XXXVIII Annual congress of ISVS and International Symposium on New horizons of Camel surgery and Large ruminant surgery.	RAJUVAS, Bikaner, Rajasthan	3 days 15/10/2014 to 17/10/2014
	Workshop on "Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia	1 day 2 <sup>nd</sup> August, 2014

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

	Seminar on "e learning portal on agricultural education"	DREF, WBUAFS, Belgachia	1 day 21/01/2015
	Presentation of invited talk on stem cells in 22 <sup>nd</sup> W.B State Science and Technology Congress-2015.	University of North Bengal Darjeeling	2 days 28/02/2015 to 01/03/2015
Dr Samit Kumar Nandi	Invited lecture on "Understanding Osteomyelitis and its solution through Cost effective biomaterial based strategies" at the 3 <sup>rd</sup> International Conference and Exhibition on "Biowaivers, Biologics & Biosimilars" by OMICS Publishing Group, USA and the Editors of Journal of Bioanalysis & Biomedicine, Journal of Bioequivalence & Bioavailability and journal of Pharmaceutical Sciences & Emerging drugs applaud	International Convention Centre, Hyderabad	3 days 27/10/2014 to 29/10/2014
	Workshop on "Methods of Applied Livestock Research: Treatments, Design, implementation, Analysis, Interpretation and publication"	Department of Animal Nutrition, WBUAFS in collaboration with American Institute for Goat Research, Langston University, USA and supported by the USDA Foreign Agricultural service	1 day 15/05/2014
	Workshop on "Role of CPCSEA in Animal Welfare"	CPCSEA, Animal Ethics Society of India, Indian Pharmacological Society and WBUAFS	1 day 02/08/2014
	Seminar on "e-learning portal on agricultural education"	DREF, WBUAFS, Belgachia	1 day 21/01/2015
	Oral presentation on "Influence of single and binary doping of Strontium and Lithium on in vivo biological properties of bioactive glass scaffolds" in SAB International Symposium on "New perspectives on modern Biotechnology", India	Puducherry, India	3 days 23/03/2015 to 25/03/2015
Asit Kumar Maji, Lecturer	CAFT Adv. Trng. on "Current trends in Vet.Surg. and Imaging Techs."	GADVASU, Ludhiana	21 days 03/09/2014 to 23/09/2014
	ISVS Symposium	Bikaner, RAJUVAS	3 days 15/10/2014 to 17/10/2014





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### H.1.A.19. Department of Veterinary & Animal Husbandry Extension

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. Arunasis Goswami	Presented paper in Seminar on "Our Teachers, Our Future" at M. R. College Of Education.	B. Ed. College, North 24 – Parganas	1 day 19/07/2014
	Presented paper in Training Programme on "Role of livestock in employment in Drought Prone Area of West Bengal "	Organized by Administrative Training Institute, Kolkata	1 day 14/08/2014
	Presented paper in winter school on 'Communication in capacity Building for Animal Resource Management. Bidhan Chandra Krishi	Viswavidyalaya. 15/12/2014	1 day
	Presented paper in "Matl Tlrtha Krishi Katha" at Burdwan on "Scope of animal husbandry in livelihood development".	Burdwan	1 day 10/02/2015
Dr. Debasis Ganguli	Advanced Extension strategy for communication and management skill for Extension Personnel : The approach, methodology and application.	Bidhan Chandra Krishi Viswavidyalaya	21 days 03/12/2014 to 23/12/2014

### H.1.B. FACULTY OF FISHERY SCIENCES

#### H.1.B.1. Department of Aquaculture

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Shib Kinkar Das	Seminar on Impact of Global Warming... Sustainable Development	Centre of Ecological Engineering in the University of Kalyani, Kalyani, West Bengal	2 days 25/03/2014 to 26/03/2014

**HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)****H.1.B.2. Department of Aquatic Animal Health**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. T. J. Abraham, Professor	Marine bacterial diversity. Expert consultation on Marine biology and biodiversity with emphasis on preparation of instruction material, manual and book.	ICAR-Central Institute of Fisheries Education, Kolkata Center, Kolkata	Two days 27/12/2014 to 28/12/2014
	India Aquaculture Pathfinder - Blue Paper Forum	Hotel Lalith Ashok, Bengaluru, organized by U.S Soybean Export Council (USSEC) and Professional Fisheries Graduates Forum (PFGR) of India	2 days 05/02/2015 to 06/02/2015
Dr Gadadhar Dash	10 <sup>th</sup> Indian Fisheries and Aquaculture Forum	NBFGR, Lucknow	4 days 12/11/2014 to 15/11/2014
Dr Gadadhar Dash	International Workshop on Surveillance of Fish Diseases	NBFGR, Lucknow	1 day 15/11/2014
Dr Gadadhar Dash	25 <sup>th</sup> All India Congress of Zoology & National Seminar	Gurukul Kangri University, Haridwar	3 days 17/11/2014 to 19/11/2014
Dr Gadadhar Dash	2 <sup>nd</sup> Asian Congress of Protistology & 9 <sup>th</sup> Asian Conference on Ciliate Biology	Kalyani University, Kalyani	3 days 27/11/2014 to 29/11/2014

**H.1.B.3. Department of Aquatic Environment Management**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. B.K.Das Professor & Dean	Vth Dean's Committee Meeting	College of Fisheries Mangalore, Karnataka	2 days 19/11/2014 to 20/11/2014
	Pre-Launch Workshop on implementation of All India Network Project on Mariculture	Karwar Research Centre of CMFRI, Karwar, Uttarkannada, Karnataka	1 day 25/02/2015





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr R K Trivedi Professor	Third Annual Workshop of NICRA	NASC Complex, New Delhi, India	3 days 03/07/2014 to 05/07/2014
	The 10 <sup>th</sup> Indian Fisheries and Aquaculture Forum (10ifaf)	National Bureau of Fish Genetic Resources (NBFGR), Lucknow, India	4 days 12/11/2014 to 15/11/2014
	India Aquaculture Pathfinder-Blue Paper Forum	College of Fisheries, Bengaluru, India	7 days 05/02/2015 to 06/02/2015
	NAIP Training on Impact of Climate Variability on Inland Fisheries and Strategies for Adaptation (As Resource Person)	C.I.F.R.I., Barrackpore, India	2 days 16/02/2015 to 17/02/2015
	Expert Consultation on Climate Variability and Resilience in Inland Fisheries (As Expert Consultant)	C.I.F.R.I., Barrackpore, India	1 day 18/03/2015

### H.1.B.4. Department of Fishery Economics & Statistics

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Anandamoy Mondal, Associate Professor and HOD	National Seminar on Threats to Biodiversity and Ecosystem: Impacts of Developmental projects and Climate Change and 25 <sup>th</sup> All India Congress of Zoology	Department of Zoology and Environmental, Gurukul Kangri Vishwavidyalaya, Haridwar	3 days 17/11/2014 to 19/11/2014
	2 <sup>nd</sup> Asian Congress of Protistology and 9 <sup>th</sup> Asian Conference on Ciliate Biology.	Department of Zoology, University of Kalyani, Kalyani - 741235, W.B., India	3 days 27/11/2014 to 29/11/2014
	International conference on Environment and Ecology (ICEE)-2015	Science City, Kolkata, West Bengal	3 days 02/03/2015 to 04/03/2015

### H.1.B.5. Department of Fishery Extension

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dana, S.S., Das, S.K., Mazumder, C. and Amitava Chosh.	Second International Conference on "Mother Earth (ICME II): Save It to Achieve a Sustainable Future for All". p. 100.	University of Burdwan	3 Days 10/12/2014 to 12/12/2014

**HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)****H.1.B.6. Department of Fishery Resources Management**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. S. K. Das, Professor	Workshop on Marine Ecosystem Characterization- India	NIO, Goa.	3 days 20/10/2014 to 22/10/2014
	Expert Consultation on " Marine Biology and Biodiversity with emphasis on preparation of Instruction materials / Manuals / Books.	CIFE, Kolkata Centre.	2 days 27/12/2014 to 28/12/2014
	10 <sup>th</sup> all India People's Technology Congress Agriculture & Biotechnology Sub Congress.	Ballygunj Science College, Kolkata	2 days 06/02/2015 to 07/02/2015
Dr. S. Behera Associate Professor	10 <sup>th</sup> Indian Fisheries & Aquaculture Forum	NBFGR, Lucknow	4 days 12/11/2014 to 15/11/2014

**H.1.C. FACULTY OF DAIRY TECHNOLOGY****H.1.C.1. Department of Dairy Chemistry**

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. P.K. Ghatak, Re-employed Professor	National Seminar on Innovations in Dairy Processing in India- Post Operation Flood Scenario.	Faculty of Dairy Technology. WBUAFS Mohanpur Campus	2 days 14/03/2014 to 15/03/2014
	10 <sup>th</sup> All India People's Technology Congress	FOSET, Rajabazar Science College, Kolkata	2 days 06/02/2015 to 07/02/2015
	43 <sup>rd</sup> Dairy Industry Conference	Kolkata	3 days 19/02/2015 to 21/02/2015
Dr. P.R. Ray Associate Professor	National Seminar on Innovations in Dairy Processing in India- Post Operation Flood Scenario.	Faculty of Dairy Technology. WBUAFS Mohanpur Campus	2 days 14/03/2014 to 15/03/2014





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### H.1.C.2. Department of Dairy Engineering

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Pradip Kr. Roy Asstt. Professor (Stage-2) Prof. Prasun Maili Professor Dr. Subrata Kr. Bag Associate Professor	43 <sup>rd</sup> Dairy Industry Conference	Kolkata	3 days 19/02/2015 to 21/02/2015

### H.1.C.3. Department of Dairy Microbiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. T. K. Maity Professor & Dean Dr. S. P. Sarkar (Re-employed)	Dairy Industry Conference on Dairying for Rural Prosperity	Kolkata	3 days 19/02/2015 to 21/02/2015
Dr. T. K. Maity Professor & Dean	Emerging Issues in Economic Development	Kalyani	2 days 26/02/2015 to 27/02/2015
	Perspective of Dairying in Eastern and North Eastern India: Challenges ahead	ERS of Kalyani	1 day 16/10/2014
	Paper presented at National seminar on soy milk analogue	Hotel Taj Gateway, Raipur	1 day 08/06/2014
	10 <sup>th</sup> All India People's Technology Congress	FOSET, Rajabazar Science College, Kolkata	2 days 06/02/2015 to 07/02/2015

### H.1.C.4. Department of Dairy Technology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. D. C. Sen, (Re-employed)	UGC Sponsored National Seminar on recent trends in Chromatographic separation	Prabhat Kumar College, Contai, Purba Midnapore, West Bengal	1 day 24/07/2014
Prof. M.K. Sanyal, (Re-employed) Prof. S.C. Pal, (Re-employed) Prof. S. K. Gangopadhyay, (Re-employed) Prof. D. C. Sen. (Re-employed)	43 <sup>rd</sup> Dairy Industry Conference	Science City, Kolkata	3 days 19/02/2015 to 21/02/2015

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

## H.1.D. DIRECTORATE OF RESEARCH, EXTENSION &amp; FARMS

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. B K Chand, Farm Manager	Regional Forum on Solutions for Oceans, Coasts and Human Well-Being in Asia and the Pacific	BE Resort Maclan, Cebu City, Philippines	1 days 27/05/2014 to 30/05/2014
	National Symposium on Climate Change Adaptation in Rural Areas of India	Taj Mahal Hotel, New Delhi	3 days 13/10/2014 to 15/10/2014
	The 10 <sup>th</sup> Indian Fisheries and Aquaculture Forum (10 ifaf)	NBFGR, Lucknow	4 days 12/11/2014 to 15/11/2014
	International Workshop on Risk Management & Adaptation to Climate Change for Sustainable Growth in Deltaic Regions	The Park Hotel, Kolkata	3 days 28/01/2015 to 30/01/2015
	Stakeholders Consultation Workshop on Sustainable Aquaculture on Indo-German Financial Cooperation	WBUAFS, Kolkata	1 day 27/12/2014
	Expert Consultation Workshop on Climate Resilient Aquaculture Strategies for Indian Sundarban	VCI Seminar Hall, Kolkata	1 day 25/03/2015
Dr. Satabdi Das, Scientist	National Workshop on NISAGENET for Appraisal cum Validation of Data	Chandra Sekhar Azad University of Agriculture & Technology, Kanpur	2 days 11/11/2014 to 12/11/2014

## H.2. ABROAD VISIT OF SCIENTISTS

## H.2. 1 Dr. G. P. Mondal, Sr. Lecturer, Department of Animal Nutrition

Sl. No.	Period of Visit		Institute/ Country visited	Purpose of Visit
	From	To		
1	22/09/2014	26/09/2014	Yangon, Myanmar	To deliver lecturer in seminar
2	10/03/2015	14/03/2015	VIV Asia, Bangkok, Thailand	To attend Exhibition

## H.2. 2 Dr. M.C. Pakhira, Department of Instructional Livestock Farm Complex

Sl. No.	Period of Visit		Institute/ Country visited	Purpose of Visit
	From	To		
1	26/06/2014	27/06/2014	Penang, Malaysia	Attended '2 <sup>nd</sup> Asian High Quality Poultry Congress'
2	11/03/2015	13/03/2015	BITEC, Bangkok, Thailand	Attended 'VIV Asia-2015' Livestock Exhibition cum Technical seminar'





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

### II.2.3 Dr. Sarbani Hazra, Department of Veterinary Surgery & Radiology

Sl. No.	Period of Visit		Institute/ Country visited	Purpose of Visit
	From	To		
1.	30/03/2014	06/04/2014	World Ophthalmology Congress, Tokyo, Japan	Oral presentation.

### H.2.4 Dr B K Chand, Farm Manager, Directorate of Research, Extension & Farms

Sl. No.	Period of Visit		Institute/ Country visited	Purpose of Visit
	From	To		
1.	27/05/2014	30/05/2014	Participation in Regional Forum at Mactan, Cebu City, Philippines	Participation in Regional Forum on Solutions for Oceans, Coasts and Human Well-Being in Asia and the Pacific

### H.3. HONOURS / AWARDS/ FELLOWSHIPS ETC. RECEIVED BY THE TEACHERS/ SCIENTISTS/ OFFICERS OF THE UNIVERSITY

Sl. No.	Name of the recipient	Name of the honour/ award/ fellowship/ scholarship etc.	Offering organization	Field of remarkable activity
1	Dr. A.K.Patra, Animal Nutrition	'Associateship' (2014-2018)	National Academy of Agricultural Science, India	Animal Nutrition
2	Dr. G.P. Mandal Animal Nutrition	Best oral presentations	Indian Academy of Veterinary Nutrition and Animal Welfare & Animal Nutrition Association	Enrichment of goat meat with health promoting fatty acids
3	Dr. P.N.Chatterjee Animal Nutrition	Best Poster Award	Animal Nutrition Society of India.	Formulation of Area, specific mineral mixture.
4	Dr. Aruna Pal, Instructional Livestock Farm Complex	Biocare  Best poster presentation Award	Department of Biotechnology, Ministry of Science and Technology, Govt. of India.  Society for Conservation of Domestic Animal Biodiversity, NBAGR, Karnal	Int. Symp. on Sustainable '..... Developing countries'

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Sl. No.	Name of the recipient	Name of the honour/ award/ fellowship/ scholarship etc.	Offering organization	Field of remarkable activity
5.	Prof. S. Biswas, Livestock Products Technology	Member, Board of Director,	West Bengal Livestock Development Corporation Ltd. Govt. of W.B	
		Member, Research Advisory Committee,	NRC on Meat, Hyderabad, Nominated by ICAR, New Delhi	
		Member, VCI accreditation committee for establishment of new colleges	Nominated by VCI, New Delhi	
		Member of APEDA Accreditation team for Licensing Slaughter House	Ministry of Commerce, Govt. of India.	
		Member, State level Committee of Slaughter House	Dept. Of Urban Development, Govt. Of W.B	
6	Dr. Gopal Patra, Livestock Products Technology	Expert Committee Member	APEDA, Min. of Comm., GOI	Slaughter house licensing and Registration
7	Dr. D. Ghosh Teaching Veterinary Clinical Complex	Fellow	ISACP	Canine surgery
8	Prof. Samar Sarkar, Veterinary Medicine, Ethics & Jurisprudence	Fellow	Association of Public Health Veterinarians	Public Health
9	Dr. Indranil Samanta Vety. Microbiology	Associate Editor (Bacteriology)	BMC Veterinary Research Journal	
10	Dr. S.K. Mukhopadhyay, Deptt of Veterinary Pathology	Lifetime achievement award of 'Best Laboratory Animal Pathologist'	Indian Association of Veterinary Pathologist (IAVP)	Vety. Pathology





## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Sl. No.	Name of the recipient	Name of the honour/ award/ fellowship/ scholarship etc.	Offering organization	Field of remarkable activity
11	Dr. T.K. Sar, Vet. Pharm. & Toxicology	Best Young Faculty Award	Indian Pharmacological Society, West Bengal branch	Oration presentation of research paper
12	Prof. T.K.Mandal, Vet. Pharm. & Toxicology	Expert member as toxicologist	Tea Board, GOI Young Scientist Award	
13	Dr. J Mukherjee, Vety. Physiology	Young Scientist Award 2014	Society of Animal Physiologists of India (SAPI)	Lactation Physiology
14	Dr. Pradip Kumar Das, Vety. Physiology	General Secretary	Society of Animal Physiologists of India	
15	Dr Sarbani Hazra, Vet. Surg. & Radiology	Award for Distinguished abstract	Congress secretary World Ophth. Congress, Tokyo, Japan.	Ophthalmology
		Designation of abstract as "HOT TOPIC"	Association for Research in Vision and Ophthalmology	Ophthalmology
		Editorial Board member	Journal SOJ Veterinary Sciences, USA.	Ophthalmology
16	Shyamal Kanti Guha, Vet. Surg. & Radiology	Chaired the Poster session in agricultural and animal science session.	22 <sup>nd</sup> W.B State Science and Technology Congress-2015, on 28th February, 2015	
17	Samit Kumar Nandi Vet. Surg. & Radiology	Session Chair, on Analytical Strategies, Bioequivalence Assessment and BCS & IVIVC Based Biowaivers	"3rd International Conference and Exhibition on Biowaivers, Biologics & Biosimilars" in International Convention Centre, Hyderabad	
18	Asit Kumar Maji Vet. Surg. & Radiology	International Reviewer	Elsevier Intl. Jr. Vety. ESc. and Med.	

## HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Sl. No.	Name of the recipient	Name of the honour/ award/ fellowship/ scholarship etc.	Offering organization	Field of remarkable activity
19	Asit Kumar Maji Vet. Surg. & Radiology	Lead Paper presentation, <b>Rapotier of Session</b>	Ind. So. Adv. Canine Practice	
20	Dr Gadadhar Dash, Aquatic Animal Health	Fellow of Zoological Society of India(FZSI)	Zoological Society of India	Aquatic Animal Health
		Acted as an Expert Member for "Seed Certification and Accreditation Team"	Department of Fisheries, Govt. of West Bengal in 2014	
21	Prof. R. K. Trivedi, Dr. B. K. Chand, Dr. S.K.Rout & Mr. S.K.Dubey, Aquatic Environment Management	Best Poster Award (First)	College of Fisheries, Mangalore	Climate Resilient Aquaculture Strategies.
22	DR. P.R. Ray Dairy Chemistry	Best poster award	National Seminar on Innovations in Dairy Processing, Faculty of Dairy Technology, WBUAFS	Milk Quality Assurance
23	Dr. M.K.Sanyal, Dairy Technology	Expert for selection	ASRB, New Delhi & Bhagirathi Milk Union Ltd. Berhampore,	
24	Dr. (Mrs.) Satabdi Das, Scientist (Selection Grade) DREF, WBUAFS	Performance Award, 2014	NISAGENET, IASRI (ICAR)	For excellent performance of the project units amongst several units





# DETAILS OF PUBLICATION OF BOOK, BOOKLETS, LEAFLETS, MANUAL ETC. BY DIFFERENT UNITS :



## I.1. FACULTY OF VETERINARY & ANIMAL SCIENCES

### I.1.1. Department of Livestock Products Technology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Abattoir Practices & Animal Products Technology including meat science	Book	Subhasish Biswas, Gopal Patra, Arun Kr. Das, D. Bhattacharyya	In press
Bachhur Palan	Book	Barun Roy, Subhasish Biswas	Published from DREF

### I.1.2. Department of Veterinary Anatomy & Histology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
'Mastitis in dairy animals an update' in Functional anatomy of bovine udder	Book	Partha Das , Co-Author	2014

### I.1.3. Department of Veterinary Bio-Chemistry

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
<b>Practical Manual of Veterinary Biochemistry</b> Basic and applied techniques employed for qualitative and quantitative analysis for bio-molecules to the requirements of students of Veterinary Biochemistry, Microbiology, Physiology, Animal Genetics and breeding etc.	Manual	Subhasis Batabyal	January, 2015

## DETAILS OF PUBLICATION (Contd...)

### I.1.4. Department of Veterinary Gynaecology & Obstetrics

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Practical manual on Veterinary Gynaecology & Obstetrics - (Course No VOG-411)	Manual	S.Basu, U.Datta, P.R. Nandi, Mrs. K.Ray	2014
Practical manual on Veterinary Obstetrics (Course No VOG-421)	Manual	S.Basu, U.Datta, P.R. Nandi, Mrs. K.Ray	2014
Practical manual on Veterinary Andrology and A.I. (Course No VOG- 511)	Manual	S.Basu, U.Datta, P R. Nandi, Mrs. K.Ray	2014

### I.1.5. Department of Veterinary Microbiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Veterinary Mycology ISBN: 978-81-322-2279-8 Publisher-Springer	Book	Dr. Indranil Samanta	2015
A Guide to VETERINARY MICROBIOLOGY For Examinees & Aspirants ISBN: 978 93-272-4741-1 Publisher- Kalyani publisher, Ludhiana, India	Book	Dr. S. N. Joardar	2015
AINP-BT (ICAR)	Annual Report	Dr. S. N. Joardar	2013-14
DBT-ESBL scheme (DBT, Govt. of India)	Annual Report	Dr. S. N. Joardar	2013-14
DBT-Leptin scheme (DBT, Govt. of India)	Annual Report	Dr. S. N. Joardar	2013-14
Bluetongue Disease-what and why (English) ICAR	Folder	Dr. S. N. Joardar	2014
Bluetongue in local languages (Manipuri) ICAR	Folder	Dr. S. N. Joardar	2014
Bluetongue in local languages (Assamese) ICAR	Folder	Dr. S. N. Joardar	2014
Bluetongue in local languages (Bengali) ICAR	Folder	Dr. S. N. Joardar	2014





## DETAILS OF PUBLICATION (Contd...)

### I.1.6. Department of Veterinary Parasitology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Sure Success in Veterinary Parasitology	Book	Prof. S. C. Mandal	2015, Current Book International 60, Lenin Sarani, Kol 700013. 326 pages.

### I.1.7. Department of Veterinary Pathology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Neoplasms in Dogs.	Book	S K Mukhopadhyay	LAP LAMBERT Academic Publishing GmbH & Co. KG, Saarbrücken, Germany [ISBN: 978-3-8443-9398-9].
Diseases of Wild Spotted Deer	Book	S K Mukhopadhyay	VDM Verlag Dr. Muller GmbH & Co. KG, ISBN : 978-3-639-36626-6)

### I.1.8. Department of Veterinary Physiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Uthane Murgi Palan published by Kalyani Publishers (ISBN No.: K 15872 2)	Book	Dr. Pradip Kumar Das Dr. S Pradhan and Dr. S. Maity	June, 2014; First edition; Publication; 84 pages
Techniques in Veterinary Physiology. Published by West Bengal Veterinary Council (ISBN: 978-81-929561-0-7)	Hand Book	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee, Dr. Joydip Mukherjee and Prof. Sagar Sanyal	July, 2014; First Issue, 152 pages
Laboratory Manual on Veterinary Physiology (Veterinary Physiology – I)	Manual	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee and Dr. Joydip Mukherjee	August, 2014; Fifth Edition (Reprint) 50 pages

## DETAILS OF PUBLICATION (Contd...)

Laboratory Manual on Veterinary Physiology (Veterinary Physiology – II)	Manual	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee and Dr. Joydip Mukherjee	August, 2014; Fourth Edition (Reprint), 36 pages
Laboratory Manual on Veterinary Physiology (Veterinary Physiology – III)	Manual	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee and Dr. Joydip Mukherjee	August, 2014; Second Edition (Reprint), 44 pages

## I.1.9. Department of Veterinary Surgery &amp; Radiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Eye Diseases and Disorders - A Complete Guide. Book chapter Fibrotic Diseases of the Eye: Potential Therapeutic Targets		Dr Sarbani Hazra Dr Aditya Konar	2015, iConcept Press Ltd. ISBN 978-1-922227-324.
Practical manuals for UG students. (VSR-411 and VSR-421 courses)	Manual	S. K. Guha with all Departmental teachers	2014
Role of Rosuvastatin in segmental healing	Book	S. K. Guha, Manloi Konyak	2014 LAP LAMBERT Academic Publishing. Germany. ISBN-10: 384734286X ISBN-13: 978-384734286.
Application of stem cells in canine osteoarthritis	Book	S. K. Guha, Tarani Naskar	LAP LAMBERT Academic Publishing. Germany. ISBN:978-3-659-69561-2
Text Book on "Veterinary Surgery and Radiology (At per VCI Syllabus)"	Book	Samit Kumar Nandi, Samar Halder and Mozammel Hoque	Kalyani Publishers, Ludhiana, India second revision (2014 )

## I.1.10. Department of Veterinary &amp; AH Extension Education

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Impact of Extension Education of livestock owners in Sundarban, W. B., India	Book	A. Goswami & S. Biswas	2014
RKVY on livelihood through livestock production system	Book (Bengali)	Pakhira et. Al.	2014





## DETAILS OF PUBLICATION (Contd.)

### I.2. FACULTY OF FISHERY SCIENCES

#### I.2.1. Department of Aquatic Animal Health

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Disease issues and Health Management in Aquaculture systems (Bengali)	Training Manual	Gadadhar Dash	16.02.2015
Aqua Essential	Extension literature	Gadadhar Dash	16.02.2015
How to identify diseased fish? (English)	Leaflet	T. J. Abraham	2015
How to identify diseased fish? (Bengali)	Leaflet	T. J. Abraham	2015
Aquatic animal diseases and their management (Bengali)	Extension Manual	G. Dash and T. J. Abraham	2015

#### I.2.2. Department of Fisheries Resource Management

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Application of Biology for self Employment (Shrimp Culture) - pp.61-72	Book - Part	Prof. S.K.Das & S.N.Padhi	2014 Nanda Kishore Publication, Bhubaneswar

### I.3. FACULTY OF DAIRY TECHNOLOGY

#### I.3.1. Department of Dairy Chemistry

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Chemistry of Cheese	Monograph	P.R.Ray and P.K.Ghatak	2014, 62 pages
Research Techniques in Dairy Chemistry- A Laboratory Manual	Manual	P.R.Ray and P.K.Ghatak	2014, 78 pages

## DETAILS OF PUBLICATION (Contd...)

### I.3.2. Department of Dairy Microbiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Microbiology of Dairy Products	Manual	Dr. T. K.Maity	2014
Microbiology of Starter culture and fermented milk	Manual	Dr. T.K.Maity	2014

### I.4. DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Introducing Salt-tolerant Species and preparing for disasters	Booklet	Dr. B. K. Chand	2014
University Newsletter	Newsletter	Directorate of Research, Extension & Farms	January, 2015
Project Bulletin on NISAGENET and e-krishishiksha portal	Project Bulletin	Dr. Satabdi Das	10/03/2015

### I.5.KRISHI VIGYAN KENDRA

#### I.5.1. Ashokenagar KVK, North 24 Parganas

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Adoption of technology for sustainable farming through 3Rs (Recharge, Reuse and Recycle)	Proceedings	PC / SMS of the KVK	2014-15
Extension literatures : 1. Dhaner sushanghato sasya surakshar upay 2. Matir sasthya surakshya, 3. Sankar dhan, 4. Pat pochano pukure macher chas, 5. Desi magur macher chas, 6. Banaraja murgi palon-gramin bikasher natun sambhabona, 7. Has-Murgir kichu tikaprodan somoysima o kichu proyojonio osudh	Extension literature	PC / SMS of the KVK	





## DETAILS OF PUBLICATION (Contd...)

### I.5.2. Murshidabad KVK, Murshidabad

Name of book, booklets, Handout, report, manuals etc	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Booklets on different topics in Bengali : 'Prani Palan', 'Hans Palan', 'Chhagal Palan', 'Antur Pukurer Paricharya', 'Rangin Maachher Chash', Sabji Chash etc.	Extension Literature	Subject Matter Specialists	2014-15

### I.5.3. Ramsai KVK, Jalpaiguri

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Management of lactating cattle	Extension Pamphlets/ literature	Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	2014-15
Grow Safe & Healthy Food	Extension Pamphlets/ literature	Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	2014-15
Rearing of Crossbred cows for increased income	Extension Pamphlets/ literature	Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	2014-15
Important information & Prevention Japanese Encephalitis	Extension Pamphlets/ literature	Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	2014-15
Swine Flu – Prevention & Cure	Extension Pamphlets/ literature	Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	2014-15
Training Calendar 2015 – 2016 of Jalpaiguri KVK	Extension Pamphlets/ literature	Dr. Biplab Das Dr. Manas Kumar Das, Dr. Soma Banerjee,	2014-15



## CENTRAL INSTRUMENTATION FACILITIES

During XIth five year plan University had received a fund from the Indian Council of Agricultural Research (ICAR), New Delhi under 'Establishment of Central Instrumentation Facility'. Utilizing that fund it has strengthened its Central Instrumentation facilities for the three faculties. Valuable scientific equipments costing Rs. 1 lakh and above have been procured out of the fund received from Government of India, ICAR, State Government etc. The present status of such equipments / instruments are furnished below -

### List of Valuable Equipments under the Central Instrumentation Facility :

#### A. Faculty of Veterinary & Animal Sciences

Sl. No.	Equipments
1	8 TPL Lab Model Torque Twin Screw Centrifuge
2	Electron capture detector
3	Inverted Tissue Culture (Sigma)
4	Inverted Trinocular
5	ECD with Electrometer
6	Low Pressure Chromatography System
7	HP Proliant Server : Web & Mail Server
8	UV - VIS Spectrophotometer
9	Ultra Pure Water Purification System (Animal Nutrition Dept.)
10	ELISA Reader (Vet. Physiology & VEPM)
11	PCR Thermocycler
12	Gel Doc System
13	Electrophoresis System
14	Inverted Microscope, Steriozoom Microscope and Fluorescence Microscope with Photographic attachment
15	Fluorescence Spectrophotometer
16	HPLC Unit (Vety. Biochemistry)
17	Rotary Microtome (Vety. Pathology)
18	Trinocular Research Microscope (Vety. Anatomy)

#### B. Faculty of Fishery Sciences

Sl. No.	Equipments
1	High Performance Liquid Chromatography
2	Analytical Balance
3	Modular Laboratory
4	Atomic Absorption Spectrophotometer
5	Water purification system
6	Carbon di-oxide Incubator
7	Microfuge
8	Thermal cycler
9	Microblock Digestion system
10	U-V Trans-illuminator
11	Air purifier / curtain
12	Gas chromatograph
13	Inverted Microscope
14	Deep freeze
15	Generator
16	Canning Machine

#### C. Faculty of Dairy Technology

Sl. No.	Equipments
1	Protein Analyzer
2	Infra red Analyzer
3	Ice Cream Plant
4	Condensing Unit
5	Drying Unit
6	Moisture Analyzer
7	Gel Filtration
8	Rheometer
9	BOD Analyzer
10	PCR
11	Vacuum Milk Concentrator





# CENTRAL LIBRARY AND INFORMATION NETWORK SERVICES (CLINS)



In the present scenario, Research and Extension activities in a University system, require extensive use of communication of information. In case of Veterinary, Fishery and Dairy Sciences also, improved methods of transmission of information is a necessity.

Since inception of the University in the year 1995, there was an substantial need to set up a Centralised Library system to keep up in pace with time. As a result of this, WBUAFS established the Central Library and Information Network Service (CLINS) at its Head quarter at Belgachia, Kolkata by utilizing ICAR fund and started functioning with the books, journals and other materials, transferred from BCKV. With the receipt of fund from ICAR under “**Strengthening of Library information system**” and Development Grants infrastructural facilities has been developed for the benefit of the students, scholars and academicians of the University. At present, the Central Library has two units at Mohanpur and Chakgaria Campuses of the University. A brief listing of the facilities available at present are:

Sl. No.	Facilities	Applicable to
1	Library Hours	<b>Kolkata Campus:</b> Monday to Friday: 10 am to 7 pm <b>Mohanpur &amp; Chakgaria Campus:</b> Monday to Friday: 10 am to 5.30 pm
2	Database of Books	Total : 19636 Veterinary Science : 12970 Dairy Science : 7020 Fishery Science : 2010 upto April 2011 (Computerized) 6000 Foreign Journals : 27 Indian Journals : 23
	Database of Journals (Computerized)	
	Database of annual reports, pamphlets, bulletin, indexes and research highlights and news letter	1500
	Total number of thesis / Dissertation including Ph.D (fully digitized)	1500
3	<b>Services:</b> <ul style="list-style-type: none"> <li>Internet Browsing privileges to the users and Online Abstracting Services</li> <li>Wi-fi service</li> <li>Information Hub</li> <li>University Bookshop</li> <li>On line journals (under CeRA)</li> </ul>	Extended to Post graduate and Research level users  Elsevier – 358 Journals, Taylor & Francis – 1079 Indian Journals Com-131, Annual Review Inc.- 22 CSRI – 8, Springer Verlag – 70, Informatics - 3327

## CENTRAL LIBRARY AND INFORMATION (Contd. )

Sl. No.	Facilities	Applicable to
4	<b>Status of Library Automation</b> Computerization of Catalogue Total No. records Online catalogue Circulation fully automated Books in the Library  Journals No. of Journals in the Library Number of theses abstracts digitized Digitized abstracts	Done 34000 Available Yes 22000 Number Completed: 6000 (Back volume) International: 27 ; National: 23 1500  Integrated with Library server

## A brief Report on the grants received from ICAR under Library Strengthening 2014-2015

Sl. No.	Item	Impact
1	Books, Reference Reading materials	New purchase of text and references were made on the basis of the recommendations of the faculty members on the subjects of Veterinary, Dairy, Fishery and allied sciences which will help the lending facilities to the students in each faculty.
2	Book Bank	The Central Library extends the book bank facilities for the Veterinary Faculty.
3	Competitive Examination Books.	Different books on competitive examinations like ICAR-JRF/ TOFEL /GRE and other competitive examination is made available.
4	Digital Library	The Software for University Libraries (SOUL), 2 <sup>nd</sup> ed. has been properly functioning. Information hub has been developed in the Library premises using computers with latest configuration in all the three campuses where the students, researchers and scientists can access internet/CeRA/on-line national/international journals. OPAC facility through web has been developing and providing services to the users. LAN set-up of the campus is being maintained by the Central Library. The Website of the University is undergoing development. A provision for official e-mail id has been made.
5	e-Learning	The Central Library provides the internal e-Learning facility by utilizing the fund from ICAR.





## IMPORTANT PROGRAMS OF THE HONOURABLE VICE CHANCELLOR OF THE UNIVERSITY DURING THE YEAR



Sl. No.	Hon'ble VC's Programs	Venue	Duration (Dates)
1.	22 <sup>nd</sup> meeting of ICAR Regional Committee - II	Central Inland Fisheries Research Institute, Barrackpore	27 <sup>th</sup> – 28 <sup>th</sup> June, 2014
2.	Inauguration of renovated campus of Faculty of Veterinary & Animal Sciences, WBUAFS	University Auditorium, Mohanpur Campus	17 <sup>th</sup> August, 2014
3.	Meeting of the On-going Niche Area of Excellence program on Animal Disease Registry and Tissue Bank	Krishi Bhawan, New Delhi	24 <sup>th</sup> – 25 <sup>th</sup> August, 2014
4.	Departmental Promotion Committee Meeting	Rajiv Gandhi Institute of Veterinary Education and Research, Pondicherry	28 <sup>th</sup> – 30 <sup>th</sup> October, 2014
5.	Inauguration of Vivekananda Centre for positive thinking	University Auditorium, Mohanpur Campus	26 <sup>th</sup> November, 2014
6.	Reunion of Veterinary Faculty	WBUAFS, Kolkata	10 <sup>th</sup> January, 2015
7.	Ninth convocation of WBUAFS	University Auditorium, Mohanpur Campus	29 <sup>th</sup> January, 2015
8.	12 <sup>th</sup> Agricultural Science Congress	NDRI, Karnal	2 <sup>nd</sup> – 5 <sup>th</sup> February, 2015
9.	SAC Meetings	Murshidabad KVK Ramsai KVK North 24 Parganas KVK	14 <sup>th</sup> January, 2015 13 <sup>th</sup> February, 2015 24 <sup>th</sup> February, 2015
10.	Dairy Industry Conference on Dairying for Rural Prosperity	Science City, Kolkata	19 <sup>th</sup> February, 2015
11.	13 <sup>th</sup> Conference of National Academy of Veterinary Sciences	Raipur, Chattishgarh	28 <sup>th</sup> February – 2 <sup>nd</sup> March, 2015
12.	Meeting for University Development	ICAR Headquarters, New Delhi	10 <sup>th</sup> – 11 <sup>th</sup> March, 2015

## **M** IMPORTANT EVENTS, EMINENT VISITORS, ACTIVITIES & ACHIEVEMENTS

The year 2014-15 was an eventful year for the West Bengal University of Animal & Fishery Sciences. Some of the important activities of the University are as follows :

### **M.1 IMPORTANT EVENTS/ACHIEVEMENTS**

#### **M.1.1. INAUGURATION OF RENOVATED CAMPUS AT MOHANPUR, NADIA**

There was a long demand to renovate the buildings of Mohanpur campus. With the special financial grant received for this purpose from the State Govt., the buildings were renovated during last one and a half year. Inauguration of the renovated campus took place on 17<sup>th</sup> of August, 2014 in the august presence of Sri Swapan Debnath, Hon'ble MOS (Independent Charge), Deptt. Of ARD, Govt. of West Bengal. Hon'ble MIC, Deptt. Of Technical Education & Training, Govt. of West Bengal, Sri Ujjwal Biswas was the Chief Guest on the occasion. Secretary ARD, Sri Rajesh Sinha, Director of Veterinary Services, Milk Commissioner and many other officials of the State Govt. were invited on this occasion. Ex-Vice Chancellors of WBUAFS, Vice-Chancellor, BCKV, several Public representatives of Nadia district graced the ceremony with their presence. Hon'ble Vice-Chancellor, Registrar, Director of Research, Extension & Farms, Deans of the faculties, Faculty members, officers and staff of the University took part in the active management of the inauguration ceremony to make it a grand success. Media people were also present to cover the program. UG classes of the Faculty of Veterinary & Animal Sciences have already started in the Mohanpur campus from 26<sup>th</sup> August, 2014.



Inauguration programme of the Renovated campus at Mohanpur



## IMPORTANT EVENTS, EMINENT VISITORS (Contd...)



Hon'ble MOS (ARD Dept.) & other dignitaries lighting the ceremonial lamp during Inauguration of the Renovated campus at Mohanpur

### M.1.2. NINTH CONVOCATION

The glorious ceremony of Ninth Convocation of the University took place on 29<sup>th</sup> January, 2015 at University Auditorium, Mohanpur Campus, Nadia. His Excellency, the Governor of West Bengal and Chancellor of the University Hon'ble Sri Keshari Nath Tripathi inaugurated the convocation and presided over the ceremony. Dr. S. Ayyappan, Secretary, Department of Agricultural Research & Education, Ministry of Agriculture, Govt. of India and Director General, Indian Council of Agricultural Research, New Delhi was the Chief Guest and delivered the convocation address on the occasion. The ninth convocation of the University conferred the Degree of Doctor of Science (Honoris Causa) on Prof. Amalesh Chaudhury, Eminent Professor of the Dept. of Zoology and Founder Professor of the Dept. of Marine Science, University of Calcutta, for his immense contribution in the fields of Fishery Sciences. The degree was also conferred on Dr. Santanu Kumar Bandopadhyay, member Agricultural Scientist's Recruitment Board, New Delhi for his contribution towards Veterinary & Animal Sciences.

Sri Swapan Debnath, Hon'ble Minister of State, Deptt. of Animal Resource Development (Independent Charge) graced the occasion as Guest of Honour.



Hon'ble Chancellor and other dignitaries present in the  
Ninth Convocation of the University

1. Dignitaries on the dais
2. Hon'ble Vice-Chancellor felicitating
3. Hon'ble Chancellor felicitating Hon'
4. Dr. S. K. Bandopachyay receiving D.S.
5. Student receiving Gold Medal from H



# Glimpses of Ninth Convocation of WBUAFS





## IMPORTANT EVENTS, EMINENT VISITORS (Contd ..)

Hon'ble Chancellor, in his speech, exhorted the degree recipients to contribute immensely towards realizing the dreams of shining India and prosperous West Bengal. Chief Guest expressed his buoyant views in studies under this University and thereby immense employment opportunities during forthcoming days. Hon'ble MOS, ARD Deptt. (Independent Charge), Govt. of West Bengal wished the out-turned students a bright future. Hon'ble Vice-Chancellor elaborated the state grants released for the purpose of renovation of the Mohanpur campus as well as the infrastructural development of the campus following the VCI regulations. He also discussed about the achievements of the students and teachers of the faculty in several programs throughout the year. All the dignitaries expressed their satisfaction about the performances of the University in the different fields.

### M.1.3. ESTABLISHMENT OF VIVEKANANDA CENTRE FOR POSITIVE THINKING

The University has set up '**Vivekananda Centre for Positive Thinking**' a pioneer of its kind in the country at the University level. In this age of fast and busy life, sometimes stress starts to strangle our lives. The Centre will lend its hand to overcome this stress and provide a relief to the mind.

This centre was inaugurated by Swami Atmapriyananda, Hon'ble Vice-Chancellor of **Ramakrishna Mission Vivekananda University, Belur Math** on 26<sup>th</sup> November, 2014 at the University Auditorium, Mohanpur. Hon'ble Vice-Chancellor, Registrar, Director of Research, Extension & Farms, Deans of the Faculties and other dignitaries were present on the occasion. Students, Faculty Members, Officers and staff were also present in the gathering.



Inaugural Ceremony of 'Centre for Positive Thinking'





Hon'ble Vice-Chancellor of Ramakrishna Mission Vivekananda University visiting the Mohanpur Campus



Hon'ble VCI team members visiting laboratory at Mohanpur Campus



Hon'ble VCI team members interacting with students at Mohanpur



## IMPORTANT EVENTS, EMINENT VISITORS (Contd...)

The Centre is operating under the Dean, Students' Welfare and and Incharge, Student Welfare has been entrusted to look after the day-to-day activity of the Centre by organizing classes on thoughts of Swamiji in presence of representatives of Belur Math. The Math is likely to donate books for the centre for studies of the students. Within a short spell of time the Centre will start to function in full swing.

### M.1.4. VISIT OF VETERINARY COUNCIL OF INDIA TEAM TO WBUAFS

A team from Veterinary Council of India visited the Mohanpur Campus during 18<sup>th</sup> to 20<sup>th</sup> December, 2014. The team comprising of Dr. A.G.Karpe, Professor & Head, Microbiology, CVSC & AH, Parwani, Maharashtra Animal and Fishery Science University, Dr. N.K. Dikshit, Prof. & Head, Vety. Physiology, CVSC & AH, Mhow, MP, Dr. S. K. Tiwari and Prof. & Head, Veterinary Surgery & Radiology, CVSC & AH, Anjora, Durg, Chhattisgarh visited the different departments of the newly renovated campus and expressed satisfaction over the infrastructural facilities for imparting education in Veterinary Science in accordance with the Minimum Standard of Veterinary Education (MSVE).

### M.1.5 ACTIVITIES OF NATIONAL SERVICE SCHEME (NSS)

National Service Scheme (NSS) is one of the biggest team of voluntary workers comprising of students and teachers. They through sustained community interactions and programmes in different aspects of community development play a very important role for the society. It is run by the Ministry of Youth Affairs and Sports, Govt. of India, over the years and shows how to combine knowledge and action to achieve results which are desirable for community development. The WBUAFS received the sanction of State NSS in the year 2006-07 with a minimum number of volunteers. Now the strength of the NSS volunteers have been increased and the allotted fund for NSS Activity has also been enhanced.

Following Camps were held by the NSS team of WBUAFS during the year :



Mass vaccination cum Health Camp organised by NSS



## IMPORTANT EVENTS, EMINENT VISITORS (Contd...)

No.	Purpose	Place	Duration	Participants
1	NSS Camp for Training cum Health cum Vaccination Camp. 900 Nos. of Animals were treated and vaccinated	Chandanpiri, Namkhana, South 24 Pgs.	04/04/14 – 06/04/14	36 Nos. of Students alongwith 10 Teachers
2	NSS Camp for Health cum Vaccination Camp. 1500 Nos of Animals were treated and vaccinated	Lodhasuli, Jhargram, Paschim Midnapore	25/06/11 – 27/06/11	53 Nos. of B.V.Sc. & A.H., M.V.Sc. & Ph.D. Students alongwith 8 Teachers
3	NSS Camp for Health cum Vaccination Camp. 800 Nos. of Animals were treated and vaccinated	Lodhasuli, Jhargram, Paschim Midnapore	20/02/15 – 21/02/15	53 Nos. of B.V.Sc. & A.H., M.V.Sc. & Ph.D. Students alongwith 5 Teachers
4	NSS Camp for Health cum Vaccination Camp. 950 Nos. of animals were treated and vaccinated	Rangabelia, Jatirampur, Gosaba, South 24 Pgs.	02/03/15 – 04/03/15	60 Nos. of B.V.Sc. & A.H., M.V.Sc. and Ph.D. Students alongwith 3 Teachers
5	NSS Camp for Health cum Vaccination Camp. 800 Nos. of animals were treated and vaccinated	Mohanpur, Nadia	30/03/15	75 Nos. of B.V.Sc. & A.H., M.V.Sc. and Ph.D. Students alongwith 9 Teachers



A visit to the Library by Hon'ble VCI team members and University officials at Mohanpur



Republic Day Celebration



Hon'ble Vice-Chancellor addressing on the occasion of Independence Day

## M. 2. DISTINGUISHED VISITORS IN THE UNIVERSITY

1. Sri Keshari Nath Tripathi, His Excellency, Governor of West Bengal and Chancellor of the University.
2. Dr. S. Ayyappan, Secretary, Department of Agricultural Research and Education, & Director General (Indian Council of Agricultural Research), Govt. of India, New Delhi.
3. Sri Swapan Debnath, Hon'ble Minister of State (Independent Charge), Department of Animal Resource Development, Govt. of West Bengal.
4. Sri Ujjwal Biswas, Hon'ble Minister in Charge, Department of Technical Education and Training
5. Prof. Amallesh Chaudhury, eminent professor of the Dept. of Zoology.
6. Dr. Santanu Kumar Bandopadhyay, eminent veterinarian.
7. Dr. A.G.Karpe, Professor & Head, Microbiology, CVSC & AH, Parwani, Mafsu
8. Dr. N.K. Dikshit, Prof. & Head, Vety. Physiology, CVSC & AH, Mhow, MP
9. Dr. S. K. Tiwari and Prof. & Head, Vety. Surgery & Radiology, CVSC & AH, Anjora, Durg, Chhattishgarh
10. Sri Rajesh Sinha, Secretary, Department of Animal Resource Development, Govt. of West Bengal.
11. Sri Dibakar Mukhopadhyay, Milk Commissioner, Govt. of West Bengal.
12. Dr. J.K. Jena, Director, NBFGR, Lucknow visited the Faculty of Fishery Sciences
13. Smt Mala Saha, MLA, visited the University on several occasions.
14. Smt. Malobika Saha, Director of Fisheries, Govt. of West Bengal
15. Dr. S. Bose, Director of Animal Husbandry & Vety. Services, Govt. of West Bengal
16. Dr. A. P. Sharma, Director, Central Inland Fisheries Research Institute.
17. Dr. S. K. Bandyopadhyay, Director, Medical Education & Research, Govt. of West Bengal.





**M.3. MEETINGS ATTENDED BY HIGHER OFFICIALS FOR ACADEMIC/INFRASTRUCTURAL/INSTITUTIONAL DEVELOPMENT OF THE UNIVERSITY**

Sl. No.	Meeting & Venue	Attended By	Date
1	State Level Workshop of KVKs in Zone II at Salt Lake, Kolkata	Director of Research, Extension & Farms	4 <sup>th</sup> & 5 <sup>th</sup> April, 2014
2	Research Advisory Committee Meeting, NRC (Meat) Hyderabad	Director of Research, Extension & Farms	9 <sup>th</sup> & 10 <sup>th</sup> May, 2014
3	Zonal Workshop of KVKs in Zone II at NIRJAFT, Kolkata	Director of Research, Extension & Farms	4 <sup>th</sup> & 5 <sup>th</sup> June, 2014
4	Livestock Development Corporation Board Meeting, Salt Lake, Kolkata	Director of Research, Extension & Farms	Quarterly meetings
5	22 <sup>nd</sup> Meeting of ICAR Regional Committee II at CIFRI, Barrackpore	Director of Research, Extension & Farms	27 <sup>th</sup> & 28 <sup>th</sup> June, 2014
6	V <sup>th</sup> Deans Committee Meeting at College of Fisheries, Mangalore	Dean, Fishery Sciences	19 <sup>th</sup> & 20 <sup>th</sup> November, 2014
7	Deans Committee Meeting at NDRI, Karnal	Dean, Dairy Technology	6 <sup>th</sup> December, 2014
8	V <sup>th</sup> Deans Committee Meeting at Madras Veterinary College, Chennai	Dean, Veterinary & Animal Sciences	8 <sup>th</sup> & 9 <sup>th</sup> December, 2014
9	State level Advisory Committee Meeting of Slaughterhouses, Dept. of Urban Development, Govt. of W.B.	Director of Research, Extension & Farms	13 <sup>th</sup> December, 2014
10	VCI Education Meeting, Bangalore	Director of Research, Extension & Farms Dean, Veterinary & Animal Sciences	6 <sup>th</sup> January, 2015
11	SAC Meeting, Murshidabad KVK, Murshidabad	Director of Research, Extension & Farms Registrar, WBUAFS	14 <sup>th</sup> January, 2015
12	SAC Meeting, Jalpaiguri KVK, Ramsai	Director of Research, Extension & Farms Registrar, WBUAFS	13 <sup>th</sup> February, 2015
13	SAC Meeting, North 24 Parganas KVK, Ashokenagar	Director of Research, Extension & Farms Registrar, WBUAFS	24 <sup>th</sup> February, 2015

Hon'ble Vice-Chancellor and Faculty members with the winning team of SAPI Zonal level Veterinary Physiology Quiz, 2014



Student vaccinating a buffalo in a healthy camp organized by NSS





Participation of students in All India Agricultural University Youth Festival at Bangalore



Students participating in the parade at Agri-University, 2014, OKVK, Bangalore.



Dignitaries on the dais on the occasion of Inter-year Football Tournament



Students preparing for Annual Cultural Event of the University





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11	University website		<a href="http://wbuaafsc.ac.in">http://wbuaafsc.ac.in</a>



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