



NRCCWF

NEWS

National Research Centre on Coldwater Fisheries
Bhimtal (District Nainital): Uttarakhand

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From Director's Desk

Dear Reader,

Looking back at the scientific achievements and existing gaps in our knowledge in inland fishery sector as such and Coldwater Fisheries in particular, I write to focus some issues which should receive our attention during X plan and beyond. The first on the list is critical understanding of "Ecosystem interaction". The decline in fish yield from openwaters in hills has largely been attributed to the drastic reduction in quantity of water in these systems apart from quality deterioration. It has also been affected due to multiple use factor approach of water in which there is conflict among the benefits at the site or away from it. Even in aquaculture systems the water quantity and quality are acting as big constraints in overall growth of the sector. **Very little information is available on various multi-factorial interactions and relationships are not properly understood.** This situation makes it rather difficult to formulate a sound action plan for achieving sustainable production from upland ecosystems. The second issue which needs focus is "Integrated Aquaculture & Agriculture". In a country like India with varied agro-ecological regions it is difficult to formulate a uniform model for rural development based on management of natural resources in hills. In certain pockets aquaculture alone may generate good income for a farmer but such conditions cannot be duplicated across the board throughout the Himalayan region. Therefore, each altitudinal zone will have to have a specific model with an approach of Integrated Aquaculture and Agriculture (IAA). **Suitable crops/ commodities and farming practices can be linked together so that farmer is benefited from various options with their economic viability.** We have not developed location specific models to alleviate rural poverty in hill regions. The next most important issue that needs attention is "Assessment of Post-harvest losses". This aspect to a large extent is being taken care in marine fin and shell fish export but no work/information is presently available from Inland sector that too from Coldwater Fishery Sector. Since freshwater aquaculture including Coldwater Fishery will in years to come contribute more significantly to total fish production basket of the country, this aspect assumes importance and must be investigated in detail. **Further, minimizing losses will significantly add up to our current production.** Similarly, "Fish Health Monitoring" warrants priority focus, of late it has received some attention but no elaborate mechanism or expertise are in place to monitor this across the country in different agro-climatic regions, commodities and culture systems. No accurate estimate is available on production losses due to diseases and related aspects in culture systems and open-waters. This issue needs very serious attention, especially at the rural and farmer level. **There is total lack of information on this important aspect as far as hill fisheries is concerned.** Similarly, in fisheries sector the use of biotechnology is a recent development in comparison to livestock and agriculture. This modern tool has to be applied in big way to improve our fish stocks both in-terms of growth and disease resistance. Much remains to be done in this promising field. Another important issue in inland sector is mechanization of farming activities through use of energy not much has been done in this area. **Further, all production processes have social and economic implications, particularly in the modern concept of food security, environmental sustainability and impact evaluation of technology transfers.** These areas have to be addressed by the people who have strong background in social and economic science, **thus fishery science needs this added linkage in these disciplines.** Lastly the fruits of modern technological innovations in fisheries have helped economic development in certain regions of the country. **But by and large the remote, hill and tribal regions have neither access to modern technologies nor the support of finance and policy to alleviate poverty in those regions and improve productivity.** Therefore, on priority these regions have to be exposed to modern technologies, education, training, extension aspects with all support in terms of infrastructure and related back-up facilities to remove regional imbalances.

K.K. Vass

News from Research Front

Trout farming in Kumaon

The exotic trouts both rainbow and brown which were introduced at the start of 20th century in various hill states and upland regions in south of India, remained confined to small scale operation in government owned hatcheries with limited success till nineties. With the implementation of foreign aided projects, one from Norway in Himachal Pradesh and another from European Economic Commission in Jammu & Kashmir, the rainbow trout farming in these two states gained momentum and is now poised for commercial line production.

The state of Uttaraanchal having two distinct regions of Garhwal and Kumaon, have good potential for developing trout. The state has initiated trout farming in Garhwal region which is more suitable for this fish. But hardly any attempt was made to develop its farming in Kumaon region, which is comparatively more warmer and not very conducive for this species.



Farm reared Rainbow Trout

However, the earlier trials of NRCCWF to raise trout at Chirapani farm in the Champawat district of Kumaon region did not meet with success. But from 1999 with renewed efforts, the NRCCWF procured the initial seeding material (eyed eggs) of rainbow trout (*Onchorhynchus mykiss*) from Himachal Pradesh for rearing at the farm. Now these efforts of the Institute are bearing the fruits and within next couple of months the first farm reared stocks will be sold in the local market. Under agro-climatic conditions of Chirapani the institute has been successful to raise and rear the rainbow trout to table size. This success in the region will be helpful in promoting its culture in this remote area and generate additional income for local farmer.

The specially formulated diet, developed after conducting trials earlier, is now being produced on pilot scale at the CIFA feed plant. Once the feed plant is established at Chirapani, the institute will be in position to meet the local demand of farmers also.

A new lake in Kumaon being developed for Mahseer

The Kumaon lakes viz., Bhimtal, Naukuchiatal, Sattal, Garutal, Nainital used to be abode of golden mahseer. Through the years due to environmental deterioration and destructive fishing the species declined in most of the lakes. In Nainital lake it has become extinct while in Naukuchiatal hardly any fish is caught. On the other hand due to regular stocking of hatchery produced seed by NRCCWF in Bhimtal, Sattal and Gurutal some stocks of mahseer are building up. In order to develop some new mahseer lakes in Kumaon region, under the NATP programme of the institute, which is focused on mahseer, a small lake in Champawat district was identified as case study.

Accordingly after brief survey in the region the Shyاملal lake was selected for building Mahseer (*Tor putitora*) stock. The lake did not have any prior stocks of mahseer which was confirmed through repeated nettings. The wild fingerlings of mahseer were collected from river Ladhiya at Chalthi and river Kosi at Ramnagar, carefully acclimatized and transported to lake site. Prior to stocking the seed was properly conditioned as per the water quality parameters of the lake to avoid any adverse impact on fish stocks. This work was initiated from



Shyاملal Lake for Mahseer development

October 2000. A total of about 1000 fingerlings of golden mahseer in the size range of 35.0-85.0 mm in length and 1.0-4.0 g in weight were stocked in phases .

The Shyاملatal lake situated at an elevation of 1290 masl near Sukhidhang in Champawat district is a closed type system with water spread area of approx. 4 ha. The source of water to the lake are the springs at its southern end

and partly rainfed during monsoon. The water quality parameters were observed to be conducive for well being of fish. Prior to stocking of mahseer the experimental fishing in the lake revealed common carp (*Cyprinus carpio*) to be the dominant species .A few specimen of cat fishes like *Clarius batrachus* and *Heteropneustes fossilis* were also caught in the samples.

COLDWATER ISSUES/VIEWS

Nutrition and feed formulation for coldwater fishes

In aquaculture, one of the critical areas is to develop a relatively cheap diet, ensuring faster growth and maximizing survival of stocks. It has been observed that in majority of cases feed tends to become expensive while undertaking intensive fish culture, at times feed constitutes a major share in total production cost.

The basic research on formulation of balanced dry feeds for trout was initiated and evolved from the locally available ingredients in Kashmir farms with specific feeding schedules by the scientists of the then CIFRI. Further, feed formulations and feeding trials on golden mahseer were initiated by the scientists of NRCCWF at Bhimtal. The coldwater fish species require good amount of energy for withstanding rapid water current in riverine environment particularly during monsoon season. But this requirement gets minimized while rearing the fish in aquaculture farms. While formulating fish diets, protein is generally given first priority, which is required for growth and maintenance and is more expensive than other energy producing components. The protein must have a balance of essential amino acids. The requirement for carbohydrate may differ from species to species, and is adjusted in the feed accordingly. Lipid is the primary nonprotein energy source for almost all the fish species, its type and quantity in the diet should provide essential fatty acids to fish. Vitamins and minerals are generally provided as premix as their availability in the feeds generally remain uncertain.

Experiments on feeding fry, fingerling and yearling of trout revealed that the protein requirement in the diet is maximum at initial fry stage and its requirement decrease as size increases. The five artificial diets ranging in protein levels from 28-48% , formulated for brown trout by

the scientists of Coldwater Research Centre, revealed that the fish grew faster (300 g / year) at 47% level.

Mahseer is marginally a better grower as compared to other coldwater species but slower than warm water fishes, hence its requirements of protein and energy are bound to be more than other coldwater species. The larvae of *Tor putitora* after yolk absorption require appropriate wet feed. At this stage, particle size of feed is important. From several experiments conducted at the Mahseer Hatchery, Bhimtal finely emulsified chicken egg yolk followed by smashed goat's liver particles has revealed excellent results. The pre-feeding on egg yolk can last for about 2-weeks , thereafter compounded starter diet can be used more effectively.

While the basal diet for trout and mahseer has already been developed by the scientists of NRCCWF but nutrition investigations are a continuous process and still there are many gaps in our knowledge. Accordingly the studies concerning the individual requirements of amino acids, fatty acids and different vitamins in a particular coldwater fish species are very essential which may ultimately give some important clues for enhancement of growth parameters in otherwise very slow growing coldwater fish species. Development of a balanced microencapsulated primer feed for Mahseer and snow-trout species required at in the initial stages of feeding is an essential requisite for raising healthy seed.

Coldwater fish culture can be popularized only if farming of indigenous fish species gets better attention. For growth enhancement through suitable diet which is economically viable need to be developed on priority. In this direction efforts at National Research Centre on Coldwater Fisheries are underway to improve the already developed feed.

NRCCWF holds Workshop in Hindi

The Golden jubilee year celebration of Rajbhasha was organized at the Institute, which involved holding essay competition, Quiz programmes and Workshop. The main function was organized during 'Hindi week' in the month of September 2000.



Madam Bina Arya addressing the delegates at Hindi Workshop

A Hindi workshop was organised on September 7, 2000 in which the representatives from various Institutes, Government and non-government organizations, college and school teachers, researchers, local panchayat and people from various sphere participated. The objective of the workshop was to make local masses aware with the findings of the scientists of the Institute and the work so far done in the field of coldwater fisheries for the economic growth in the region and upliftment of the society as a whole. The topic of the workshop was "Parvatiya chhetron mein matsya anusandhan evam vikas". Many participants presented their papers and exhibited their findings through posters. The deliberations were very much educative and beneficial especially for the Hindi knowing people and helped in growth of scientific literature in Hindi.

The workshop was inaugurated by Prof. B.S. Rajput, Hon'ble Vice Chancellor, Kumaon University, Nainital. In his inaugural address Prof. Rajput stressed upon the need for the use of Hindi in the scientific institutions and

briefed as to how the local people can be benefited when our research findings are passed to them in their own simple language. Among the distinguished invitees, Shri U.D. Chaube, (G.M.) Kumaon Mandal Vikas Nigam Limited, Nainital; Smt. Beena Arya, Chairperson, District Board, Nainital and Dr. P .C. Harbola, Joint Director, IVRI, Mukteshwar also spoke on the occasion.

The Director of the Institute, Dr .K.K. Vass highlighted in brief the contributions made by the NRCCWF in promoting Hindi in office administration as well as its use in scientific matters through release of scientific publications in Hindi. He informed that more than 80% of the staff of the Institute has now acquired the working knowledge in Hindi and therefore the Institute has come under the Gazette notification of Government of India for successful implementation of Hindi as an official language.

In this workshop under three technical sessions thirty papers were presented by different workers. In the plenary session ten recommendations were made by the panel which were approved by the house after discussion. The best paper presentation adjudged by the judges at the workshop, was suitably awarded. Two special lectures were also delivered one by Dr. P .C. Harbola, Jt. Director, IVRI, Mukteshwar and another by Dr. Ajay Singh Rawat, Kumaon University, Nainital. On this occasion one poster exhibition was organized by NRCCWF at the venue.

Besides the workshop a quiz programme and Hindi essay competition for the staff of the Institute were also organized during the Hindi week on the topic "Rashtrabhasha ki Samasya aur Samadhan". The prizes were given for best three essays written by the staff. On this occasion six publications of the Institute in Hindi were also released by the honourable guests and distributed among the participants.

Human Resource Development

Trainings / Conferences / Seminars

- Shri Ashok Kumar Nayak , Scientist attended a training programme on " Building MIS using Visual Basic & MS-Access at IASRI , New Delhi between July 10-22 , 2000.
- Dr .K.K. Vass , Director was one of the judges for " Young Scientists award " sponsored by M.P. Coun-

cil for Science & Technology , Bhopal during July 29-30 2000.

- Dr. Madan Mohan, Pr. Scientist and Dr. A. K. Singh, Senior Scientist participated in Hindi workshop on "Matsya aur parivesh" organized by CIFE Chinhat Centre, Lucknow during August 10-11, 2000.
- Dr. K. K. Vass, Director, delivered a lecture at the

Summer Institute on “ Biological Monitoring tools for Inland Fisheries Resources “ between August 11-14 ,2000 at CICFRI, Barrackpore.

- Dr. A. K. Singh, Sr. Scientist attended the National Conference on “Sustainable rural development” organized by IESP, Gorakhpur during August 28-30, 2000.
- Shri Ashok Kumar Nayak , Scientist, participated in 71st Foundation Course for Agricultural Research Services at NAARM , Hyderabad from August 25th to December 22nd , 2000.
- Dr. K. D. Joshi , Scientist was deputed to CIFA, Bhubaneshwer , between September 12-22, 2000 for attending a Republic of Israel sponsored training programme on “ Aquaculture Development”.
- Dr. K. K. Vass , Director and Dr. Shyam Sunder, Principal Scientist participated in the first Indian Fisheries Science Congress organized by Indian Society of Fisheries Professionals held at Punjab University, Chandigarh during September 21-23, 2000. Dr. Vass presented a special paper at the congress.
- Dr. Shyam Sunder, Principal Scientist presented the activities of NRCCWF at the “Himalayan Adventure

& Tourism Mart -2000” on the occasion of Kumaon Mahotsav organized by Kumaon Mandal Vikas Nigam , at Nainital on 10-12th October, 2000.

- The scientists of the Institute Drs. Madan Mohan, C. B. Joshi, Shyam Sunder, B.C. Tyagi, A. K. Singh and K. D. Joshi attended the “National Symposium on fish health management and sustainable aquaculture” organized by College of Fishery Sciences, G. B. Pant University of Agriculture & Technology during November 1- 2, 2000.
- Dr. K. K. Vass, Director at the above symposium delivered a special lecture , acted as Chairman of one technical session, selection committee member for young scientist award and penal member for formulation of recommendations.
- Dr .A. K. Singh , Senior Scientist was deputed to NAARM, Hyderabad between November 6-16, 2000 to undertake a training in “GIS Application in Agriculture”
- Dr. Madan Mohan, Principal Scientist attended the National Symposium on “Role of Biosciences in New Millennium” organized by Dr. B. R. Ambedkar University, Agra (U.P.) on November 25-26,2000.

Extension Activities

Exhibitions

On the occasion of First Indian Fisheries Congress held at Chandigarh between September 21-23, 2000 the Institute put up an exhibition stall at the venue of congress in which achievements of NRCCWF were highlighted through display of photographic posters and other blow-up material. Departmental publications on various aspects of Coldwater Fisheries were also displayed. The delegates at the congress evinced keen interest and visited NRCCWF stall.

The NRCCWF set-up an attractive stall at Nainital depicting the activities of institute in coldwater fisheries and opportunities of developing sport-fishing in the State of Uttaranchal on the occasion of “Himalayan Adventure Tourism Mart -2000 sponsored by Kumaon Mandal Vikas Nigam during October 10-12, 2000. The NRCCWF

stall attracted many dignitaries and Shri Matbar Singh Kandari, Hon’ble Minister, Govt. of Uttaranchal paid a visit to the stall and appreciated the work done by NRCCWF .



Dr. Gopakumar (DDG) Fy. ICAR being briefed at NRCCWF stall at First Indian Fisheries Congress

Goshthies / Kisan Mela

On the occasion of 'World Food Day' October 16, 2000 the Institute organized a goshthi and farmers' day at Toli Village in Pati Block of Champawat district. Among the dignitaries present on the occasion were Dr. M.Y. Kamal, Vice Chancellor, S.K. University of Agricultural Sciences & Technology, Srinagar -Kashmir, Dr. C. S. Singh, Ex-Dean, College of Fishery Sciences, G. B. Pant University of Agriculture & Technology, Pantnagar, Shri. S.K. Maheshwari, IAS, District Magistrate, Champawat, Development Officer, Pati Block, other district officials and village Panchayat representatives. In his inaugural speech Dr. Kamal stressed on the conservation of fish and its resources. Dr. Vass, Director of the Institute briefed about the extension activities taken up by the Institute. Dr. H. S. Raina, Principal Scientist, Dr. B. C. Tyagi, Principal Scientist and Dr. K. D. Joshi, Officer Incharge, NRCCWF, Champawat also highlighted the achievements made by the Institute in promoting aquaculture activities in the region.



The Chairman & Member QRT in discussion with the Director and other senior officers at the Chirapani Experimental farm

Awards / Recognitions

Dr. K. K. Vass, Director was presented a trophy by Shri Digvijay Singh, Hon'ble Chief Minister of Madhya Pradesh for being a judge for "Young Scientists, award" sponsored by M.P. Council for Science & Technology, Bhopal during July 29-30 2000.

Dr. K.K. Vass was honoured for his contribution in the field of Inland Fisheries and Aquatic Resource Management by the College of Fisheries, G. B. Pant University of Agriculture & Technology, Pantnagar during National Symposium on "Health Management and Sustainable

Aquaculture" held at Pantnagar during November 1-2, 2000.

The Society of Biosciences, Muzaffarnagar has nominated Dr. Vass to Executive Council of Society in their meeting held at Agra on November 25, 2000.

Dr. Madan Mohan, Pr. Scientist was conferred honorary fellowship by the Society of Biosciences, Muzaffarnagar during inauguration of National symposium on "Role of Biosciences in new millennium" organized during November 25-26, 2000 by Ambedkar University, Agra.

Meetings

QRT continues its review of NRCCWF

The Chairmanship QRT Dr. M. Y. Kamal, Vice Chancellor, S.K. University of Agricultural Sciences & Technology, Srinagar (J&K) along with another team member Prof. (Dr) C. S. Singh, Ex-Dean, G. B. Pant University of Agriculture & Technology, Pantnagar visited the Institute's experimental farm at Chirapani in the Champawat district between October 16-18, 2000. The team was accompanied by Dr. Vass, Director, Dr. Raina, Member-Secretary QRT and Dr. Taygi Pr. Scientist and Incharge Extension. They reviewed the research achievements of Champawat Field Centre, aquaculture related work on rainbow trout, exotic carps at the Chirapani experimental farm, visited transfer of technology sites of NRCCWF located in and around Champawat and also released fish seed in some farmers ponds. The team had discussions with local farmers, district administration and authorities in GB Pant Agriculture University on the role of NRCCWF in promoting hill aquaculture in the region.



The members inspecting trout stocks at the farm

Institute Management Committee

The sixth meeting of Management Committee of the Institute was held on 1st July 2000 at Bhimtal under the chairmanship of the Director. The meeting was attended by Dr. V. V. Sugunan, CICFRI, Barrackpore; Dr. D. Kapoor, NBFUR, Lucknow and other members for NRCCWR. The apprised about various actions taken on the approved recommendations of the fifth meeting and fourteen agenda items were discussed for making necessary recommendations.

Research Advisory Committee

The third meeting of Research Advisory Committee of the Institute was held between September 27-29, 2000 at Bhimtal and Champawat under the chairmanship of Dr. S. P. Ayyar (Ex-Director CICFRI). The meeting was also attended by Dr. B. N. Singh, ADG (IF) ICAR HQ, Dr. M. Shahul Hameed (Cochin University of Science & Technology, Cochin), Prof. S.K. Garg (CCS Haryana Agriculture University) and Prof. K. Chatterjee (NE Hill University). On September 26, the meeting was held at Bhimtal wherein the scientists of the Institute presented their achievements under different projects. All the project programmes were discussed and their performance evaluated critically. The Director briefly apprised the committee about the progress made and constraints faced by the Institute during the year. Subsequently necessary recommendations were formulated by the RAC for further improving the research and other activities of the Institute. Later between Sept 28 to 29 the team visited the Chirapani Experimental farm and evaluated aquaculture activities / experiments with regard to rainbow trout, snow trout and exotic carps, being undertaken at the farm. The team had a detailed discussion with the scientific and technical staff working at the Champawat field centre of NRCCWF. The team appreciated the work being undertaken at the Chirapani farm.



The members of RAC releasing hatchery reared mahseer seed in nursery ponds



Third Meeting of Research Advisory Committee

Director's Conference

Dr. K. K. Vass attended the ICAR Director's Conference held on October 12-14, 2000 at NBPGR, Pusa, New Delhi.

Project Screening and Scientific Panel

Dr. K. K. Vass participated in the meeting of project screening committee and the scientific panel for Fisheries at ICAR HQ between August 16-18, 2000.

Fisheries Divisional Meeting

Dr. K. K. Vass, Director, attended the Fisheries Divisional meeting at ICAR HQ, New Delhi on August 22, 2000 which was held under the chairmanship of DDG (FY). Many scientific, administrative and financial matters of the institute were discussed in the meeting.

NACA Task Force Meeting

Dr. Vass participated in the ICAR / NACA Task Force Meeting held at Council, New Delhi on August 23, 2000. He gave a presentation of the institute activities at the meeting and highlighted the areas for NACA to help the coldwater fisheries sector in the country.

Coldwater Fisheries Development Meeting

Dr. Vass attended the meeting organized by the Agriculture Ministry, Department of Animal Husbandry & Dairy, Govt. of India on Coldwater Fisheries Development in the North-Eastern region at Krishi Bhawan, New Delhi on December 7, 2000.

Hindi Committee

Quarterly meetings of Rajbhasha (Hindi) implementation Cell of the Institute were held on regular basis and various agenda items to promote Hindi in day-to-day official

activities were discussed in detail. In every meeting action taken reports and review of the progress made in achieving the national targets for implementation of this national policy were discussed. As per the decision taken in the meetings of Hindi Cell, the workshop, quiz programmes and essay competition in Hindi were also organized for celebrating the golden jubilee of Rajbhasha "Hindi".

Visits

Twenty students of the Department of Industrial Fish & Fisheries, Bhubaneshwar along with their teaching staff visited the Mahseer hatchery on October 7, 2000 and acquainted themselves with the activities of NRCCWF and research achievements of coldwater fisheries.

Dr. M. Sinha, Director CICFRI, Barackpore, Prof. V. N. Kapoor, Executive Fellow, Department of Zoology, Allahabad University along with other faculty members and students/scholars visited the Institute and the hatchery at Bhimtal on 3.11.2000.



Various Dignitaries and other visitors at NRCCWF and Mahseer hatchery

Dr.(Mrs) Kamaljeet Kaur and Dr. (Mrs.) Asha Dhavan Faculty members of Department of Fisheries, Punjab Agriculture University, Ludhiana along with their students visited the Mahseer hatchery complex of NRCCWF at Bhimtal on Nov 3, 2000. They were briefed about the research activities of the institute.

Publications

During the period latest issue of Newsletter was released by the Chairman RAC and six other technology pamphlets prepared in Hindi were released by other members of RAC. On the occasion of Hindi workshop a special publication covering various aspects of Coldwater Fisheries in Hindi was released by chief guest Prof. Rajput, V.C. Kumaon University. The institute is committed to bring out publications useful for wide section of clients from time to time.

OTHER EVENTS

Independence Day

The Institute celebrated Independence day on August 15, 2000. The National flag was hoisted at the main office building by the Director. While addressing the members of staff he urged them to work hard for achieving the objectives of the institute. On this occasion other activities were also organized by the NRCCWF family.

Local Sports

Members of staff of NRCCWF participated in local cricket tournament at Bhimtal and gave a good performance by winning most of the league matches and qualified for the semi-final event.

Staff News

- Dr. A.K. Singh, joined NRC on Coldwater Fisheries, Bhimtal on August 1, 2000 as Senior Scientist (Fish & Fishery Science) after being relieved from National Bureau of Fish Genetic Resources, Lucknow. NRCCWF family welcomes.
- Smt. Suman Kapila, Scientist (Biochemistry) after working for more than 5 years with dedication in NRCCWF was transferred to National Dairy Research Institute (ICAR), Karnal. She was relieved off her duties at this Institute on 23.10.2000. The NRC family wishes her well and better scientific pursuits at the new Institute.

Wedding bells

- One of our colleagues Shri Amit K. Joshi got married on December 1 st, 2000. The NRCCWF family wish the couple a happy and prosperous life ahead.

Obituary

- Shri Hem Chandra Bhakt, Supporting Staff Grade I expired on 5th day of November 2000 after a brief illness. Shri Bhakt was a very good worker of this institute and contributed significantly in all field oriented programmes. He is survived by his wife and two children. NRCCWF family prays to the God may his soul rest in peace.



The Chairman RAC releasing a departmental publication.

हिन्दी खण्ड

अनुसंधान उपलब्धियां

पर्वतीय क्षेत्रों में ट्राउट मछलियों का सम्बर्द्धन

देश के पर्वतीय राज्यों तथा दक्षिणी भारत की पहाड़ियों में 20वीं शताब्दी के प्रारम्भ में ट्राउट मछलियों का पालन पोषण शुरू किया गया था ताकि इन मछलियों का बीज उत्पादन करके प्राकृतिक जल स्रोतों में संचय किया जा सके और मत्स्य आखेट द्वारा पर्यटन उद्योग को विकसित किया जा सके। लेकिन अभी तक इस क्षेत्र में वांछित सफलता नहीं मिल पायी है। जम्मू कश्मीर व हिमाचल प्रदेश में यूरोपीय आर्थिक समुदाय एवं नार्वे की सहायता से इस दिशा में सफल प्रयास किए जा रहे हैं। विगत वर्षों में कुमायूँ तथा गढ़वाल के पर्वतीय क्षेत्रों को मिलाकर बनाए गए उत्तरांचल राज्य में भी ट्राउट का पालन पोषण शुरू किया गया है।

कुमायूँ में ट्राउट के उत्पादन के क्षेत्र में रा.शी.ज.मा.अनु. केन्द्र द्वारा किए गए प्रयास अब फलीभूत होने लगे हैं। छिरापानी मत्स्य प्रक्षेत्र चम्पावत में पाली जा रही रेन्बो ट्राउट मछलियों का बीज वर्ष 1999 में हिमाचल प्रदेश से लाया गया था। तन्पश्चात उन्हें इस प्रक्षेत्र की हैचरियों और तालाबों में पाल पोष कर बड़ा किया गया। देश के पर्वतीय क्षेत्रों में ट्राउट मात्स्यिकी की वृद्धि में बहुत सकारात्मक प्रभाव के साथ चम्पावत जिले के छिरापानी मत्स्य प्रक्षेत्र से रेन्बो ट्राउट मछलियों की पहली फसल ग्रामीण जनता के उपयोग हेतु शीघ्र ही उपलब्ध हो पाएगी। भविष्य में इस प्रक्षेत्र में रेन्बो ट्राउट मछलियों के बीज का उत्पादन करके उपयुक्त जल स्रोतों में इनका संचय करने का प्रयास किया जा सकेगा।

पर्वतीय झीलों में माहशीर मछलियों के विकास हेतु नए आयाम

विश्व प्रसिद्ध कुमायूँ की झीलें नैनीताल, सातताल, नौकुचियाताल, खुरपाताल आदि कभी माहशीर मछलियों के समृद्ध आवास माने जाते थे परन्तु पर्यावरणीय क्षति के कारण इन झीलों में शैलैः शैलैः माहशीर मछलियों की पैदावार में कमी आ रही है। नैनीताल झील में तो माहशीर पूरी तरह विलुप्त हो चुकी है और नौकुचियाताल में यदा-कदा ही यह मछली पायी जाती है। इसलिए रा.शी.ज.अनु.के. द्वारा सातताल, गरुणताल, भीमताल एवं नौकुचियाताल में इस मछली की समृद्धि हेतु मत्स्य बीज का संचय किया जा रहा है। इसके अतिरिक्त विश्व बैंक

द्वारा पोषित राष्ट्रीय कृषि तकनीकी परियोजना (एन.ए.टी.पी.) के अन्तर्गत माहशीर मत्स्य भंडार वृद्धि कार्यक्रम में एक ऐसी ही प्राकृतिक झील श्यामलाताल का चयन किया गया है। जिसमें पहली बार सुनहरी माहशीर की अंगुलिकाओं का संचय किया जा रहा है।

श्यामलाताल चम्पावत जिले के सूखीढांग क्षेत्र में 1290 मी. की ऊंचाई पर स्थित लगभग 4 है. क्षे.फ. वाली इस प्राकृतिक झील को माहशीर मछलियों के भंडार के रूप में विकसित करने हेतु प्रयास किए जा रहे हैं। झील में प्राप्त मत्स्य सम्पदा में कामन कार्प प्रजाति मुख्य है तथा मांगुर एवं सिंधी भी झील में विद्यमान है। झील में माहशीर अंगुलिकाओं के संचय का कार्यक्रम माह अक्टूबर 2000 से शुरू किया गया था। लधिया नदी से एकत्र की गई इन अंगुलिकाओं की लम्बाई 35.0 से 85.0 मि.मी. तथा भार 1.0 से 4.0 ग्राम तक था तथा इस अवधि में करीब 1000 सुनहरी माहशीर की अंगुलिकाओं का संचय किया गया था।

राष्ट्रीय शीतजल मात्स्यिकी अनुसंधान केन्द्र द्वारा सम्पन्न हिन्दी कार्यशाला

संस्थान में राजभाषा हिन्दी के स्वर्णजयन्ती वर्ष का आयोजन बड़ी धूमधाम से किया गया। इस अवसर पर माह सितम्बर, 2000 में हिन्दी सप्ताह समारोह भी मनाया गया जिसमें निबन्ध प्रतियोगिता, प्रश्नोत्तरी प्रतियोगिता तथा हिन्दी कार्यशाला आदि का आयोजन किया गया। कार्यशाला दिनांक 7 सितम्बर, 2000 को आयोजित की गई जिसमें विभिन्न संस्थानों, सरकारी तथा गैर-सरकारी संगठनों, स्कूल-कालेजों के प्राध्यापकों, अनुसंधानकर्ताओं, जिला पंचायत सदस्यों तथा स्थानीय जनता ने भाग लिया। कार्यशाला का मुख्य उद्देश्य



कार्यशाला में उपस्थित जनसमूह

स्थानीय जनता में संस्थान के वैज्ञानिकों द्वारा इस क्षेत्र की आर्थिक समृद्धि हेतु प्राप्त की गई उपलब्धियों के प्रति जागरूकता उत्पन्न करना था। कार्यशाला का शीर्षक 'पर्वतीय क्षेत्र में मत्स्य अनुसंधान एवं विकास' था। अनेक प्रतिभागियों ने अपने अनुसंधान पत्रों को प्रस्तुत किया तथा उन्हें प्रोजेक्टर के माध्यम से प्रदर्शित भी किया। मुख्यतः हिन्दी के क्षेत्र तथा हिन्दी में वैज्ञानिक साहित्य की वृद्धि हेतु किए गए विचार-विमर्श अत्यधिक आकर्षक, शिक्षाप्रद एवं लाभप्रद थे।

कार्यशाला का उद्घाटन कुमायूँ विश्वविद्यालय के उपकुलपति प्रो. बी.एस. राजपूत ने किया। उन्होंने अपने उद्घाटन भाषण में वैज्ञानिक संस्थानों में हिन्दी की आवश्यकता पर प्रकाश डालते हुए इस बात पर जोर दिया कि वैज्ञानिकों द्वारा प्राप्त की गई उपलब्धियों से स्थानीय जनता कैसे अपनी स्थानीय भाषा हिन्दी के द्वारा लाभान्वित हो सकती है? प्रतिष्ठित आगन्तुओं में श्री यू.डी. चौबे, महाप्रबन्धक कुमायूँ मण्डल विकास निगम लिमिटेड, नैनीताल, श्रीमती बीना आर्या, जिला पंचायत अध्यक्षा नैनीताल तथा डा.पी.सी. हर्बोला, संयुक्त निदेशक आई.वी.आर.आई. मुक्तेश्वर ने भी इस अवसर पर विचार रखे।

इस अवसर पर संस्थान के निदेशक ने कार्यालयों के प्रशासन में हिन्दी को बढ़ावा देने के साथ-साथ हिन्दी में प्रकाशित उपलब्धियों को जनमानस तक पहुंचाने में संस्थान के योगदान पर प्रकाश डाला। उन्होंने अवगत कराया कि संस्थान के 80 प्रतिशत से अधिक कर्मचारियों द्वारा हिन्दी में कार्यसाधक ज्ञान प्राप्त कर लिया गया है तथा इस हेतु संस्थान को भारत सरकार के गजट में अधिसूचित भी कर लिया गया है। इस कार्यशाला में 30 अनुसंधान पत्रों को 3 तकनीकी सत्रों में प्रस्तुत किया गया। सर्वोत्तम अनुसंधान पत्र को इस कार्यशाला में पुरस्कृत भी किया गया। इस अवसर पर दो विशेष व्याख्यान क्रमशः डा.पी.सी. हर्बोला, संयुक्त निदेशक, आई.वी.आर.आई. मुक्तेश्वर तथा डा. अजय सिंह रावत, कुमायूँ विश्वविद्यालय नैनीताल ने दिए। इस अवसर पर रा.शी.ज.मा.अनु.के. द्वारा कार्यशाला स्थल पर एक प्रदर्शनी भी लगाई गई।

कार्यशाला के अतिरिक्त संस्थान के कर्मचारियों के बीच हिन्दी भाषा में प्रश्नोत्तरी प्रतियोगिता, निबन्ध प्रतियोगिता आदि भी कराई गई। निबन्ध प्रतियोगिता का शीर्षक 'राष्ट्रभाषा हिन्दी की समस्या और समाधान' था। इस अवसर पर संस्थान के छः हिन्दी प्रकाशनों का भी मुख्य अतिथि के कर कमलों द्वारा विमोचन कराया गया तथा उन्हें प्रतिभागियों के बीच वितरित भी किया गया।

मानव संसाधन विकास

- श्री अशोक कुमार नायक, वैज्ञानिक ने 'बिल्डिंग एम.आइ.एस. यूसिंग विसुअल बेसिक एण्ड एम.एस. एसैसे एट आई.ए.एस.आर. आई. नई दिल्ली' में 10 से 22 जुलाई 2000 तक भाग लिया।
- डा. के.के. वास, निदेशक ने मध्य प्रदेश विज्ञान एवं तकनीकी परिषद् भोपाल द्वारा आयोजित 'यंग साइन्टिस्ट एवार्ड' में जज के रूप में भाग लिया।
- डा. ए.के. सिंह वरि. वैज्ञा. द्वारा सी.आई.एफ.ई. चिन्हट केन्द्र, लखनऊ द्वारा 'मत्स्य और परिवेश' शीर्षक पर आयोजित कार्यशाला में भाग लिया।
- डा. के.के. वास, निदेशक ने 11 से 14 अगस्त, 2000 तक सी. आई.एफ.आर.आई., बैरकपुर में बायोलोजिकल मॉनिटोरिंग टूल्स फार इनलैण्ड फिशरीज रिसोर्सज' पर आयोजित ग्रीष्मकालीन शिविर में व्याख्यान दिया।
- श्री अशोक कुमार नायक वैज्ञा. ने नार्म, हैदराबाद में आयोजित 71वीं फाउन्डेशन कोर्स फार एग्रीकल्चर रिसोर्सज' में 25 अगस्त से 22 दिसम्बर, 2000 तक भाग लिया।
- डा. के.के. वास निदेशक एवं डा. श्याम सुन्दर प्रधान वैज्ञा. ने पंजाब विश्वविद्यालय चण्डीगढ़ में इण्डियन सोसायटी ऑफ फिशरीज द्वारा आयोजित भारतीय मात्स्यिकी विज्ञान कांग्रेस में 21 से 23 सितम्बर, 2000 तक भाग लिया।
- संस्थान के वैज्ञानिकों—डा. मदन मोहन, सी.बी. जोशी, श्याम सुन्दर, बी.सी. त्यागी, ए.के. सिंह एवं के.डी. जोशी ने गो.ब.प.कृ. एवं प्रौ. विश्वविद्यालय पन्तनगर के मत्स्य विज्ञान महाविद्यालय द्वारा आयोजित 'नेशनल सिंपोजियम आन फिश हैल्थ मैनेजमेंट एण्ड सस्टेनेबल एक्वाकल्चर' पर 1 से 2 नवम्बर, 2000 तक भाग लिया।
- डा. ए.के. सिंह, वरि. वैज्ञा. को 6 से 16 नवम्बर, 2000 तक 'जी. आई.एस. एप्लीकेशन इन एग्रीकल्चर' पर नार्म, हैदराबाद में प्रशिक्षण प्राप्त करने के लिए प्रतिनियुक्त किया गया।
- डा. मदन मोहन, प्रधान वैज्ञा., ने भीमराव अम्बेडकर विश्वविद्यालय आगरा द्वारा आयोजित कार्यशाला—'रोल ऑफ बायोसाइंस इन न्यू मिलेनियम' में 25 से 26 नवम्बर, 2000 तक भाग लिया।

- डा. श्याम सुन्दर, प्रधान वैज्ञानिक ने कुमायूं मण्डल विकास निगम, नैनीताल द्वारा आयोजित दिनांक 10 से 12 अक्टूबर, 2000 तक "हिमालयन एडवेंचर एण्ड टूरिज्म मार्ट-2000" में भाग लिया।

विस्तार सेवाएं

प्रदर्शनी

दिनांक 21 से 23 सितम्बर, 2000 को चण्डीगढ़ में आयोजित प्रथम भारतीय मात्स्यिकी कांग्रेस के अवसर पर रा.शी.ज.मा.अनु. केन्द्र द्वारा एक प्रदर्शनी लगायी गई। इस अवसर पर संस्थान की उपलब्धियों को विभिन्न चित्रों, पोस्टरों तथा अन्य प्रचार सामग्रियों के द्वारा प्रदर्शित किया गया तथा शीतजल मात्स्यिकी के विभिन्न प्रकाशनों को भी प्रदर्शित किया गया। कांग्रेस के अवसर पर प्रतिनिधियों ने रा. शी.ज.मा.अनु. केन्द्र द्वारा आयोजित प्रदर्शन स्थल पर व्यापक रुचि दिखायी।

गोष्ठियां/कृषक मेला

'विश्व खाद्य दिवस' 16 अक्टूबर 2000 को संस्थान ने चम्पावत जिले के पाटी विकास खंड के तोली ग्राम में एक संगोष्ठी का आयोजन किया। इस अवसर पर प्रतिष्ठित व्यक्तियों में डा. एम.वाइ. कमाल, उपकुलपति एस.के. युनिवर्सिटी ऑफ एग्रीकल्चर साइन्स एण्ड टेक्नोलॉजी, श्रीनगर, कश्मीर, डा. सी. एस. सिंह पूर्व विभागाध्यक्ष कालेज ऑफ फिशरीज साइन्स, जी.बी.प.कृ. एवं प्रौ. विश्वविद्यालय पन्तनगर, श्री एस.के. माहेश्वरी आई.ए.एस. जिलाधिकारी चम्पावत, ब्लाक डवलपमेंट आफिसर, पाटी ब्लाक तथा अन्य जिला एवं ब्लाक अधिकारी तथा ग्राम पंचायत सदस्य सम्मिलित थे। अपने उद्घाटन भाषण में डा. कमाल ने मत्स्य तथा उसके संसाधनों के संरक्षण पर जोर दिया। संस्थान के निदेशक डा. वास ने इस संस्थान की विस्तृत गतिविधियों पर प्रकाश डाला। डा. एच.एस. रैना, प्रधान वैज्ञा. डा.बी. सी. त्यागी प्रधान वैज्ञा. ने भी इस क्षेत्र में संस्थान द्वारा जल सम्बर्द्धन हेतु की जा रही गतिविधियों पर प्रकाश डाला।



उत्तरांचल प्रदेश के वन मंत्री माननीय श्री कन्डारी संस्थान के प्रकाशनों का एक सेट ग्रहण करते हुए।



संस्थान द्वारा चम्पावत जिले के पाटी विकासखंड में आयोजित किसान मेला के अवसर पर विशिष्ट अतिथिगण।

कुमायूं मण्डल विकास निगम नैनीताल द्वारा आयोजित "कुमायूं महोत्सव" में संस्थान द्वारा एक प्रदर्शनी-स्टाल लगाया गया तथा संस्थान की विभिन्न गतिविधियों को पोस्टरों, चित्रों, चार्टों तथा प्रकाशनों आदि के माध्यम से दिखाया गया था। राष्ट्रीय अनुसंधान केन्द्र द्वारा पर्वतीय क्षेत्रों में मात्स्यिकी के क्षेत्र में विकास हेतु की जा रही पहल का उत्तरांचल राज्य के मंत्री श्री मातवर सिंह कण्डारी एवं अन्य प्रतिष्ठित व्यक्तियों ने "हिमालय एडवेंचर एण्ड टूरिज्म मार्ट-2000" के अवसर पर सराहना की।

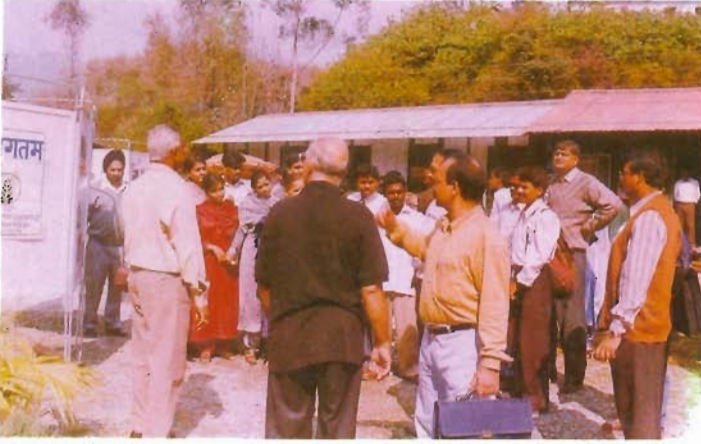
पुरस्कार/सम्मान

डा. के.के. वास, निदेशक को अन्तःस्थली मात्स्यिकी एवं जल संसाधन प्रबंधन के क्षेत्र में उनके योगदान के लिए मात्स्यिकी महाविद्यालय, जी.बी.प.कृ. एवं प्रौ. विश्वविद्यालय, पन्तनगर द्वारा 1 से 2 नवम्बर 2000 को आयोजित राष्ट्रीय विचार गोष्ठी के अवसर पर सम्मानित किया गया।

डा. मदन मोहन प्रधान वैज्ञानिक को उनके वायो साइन्सेज के क्षेत्र में योगदान के लिए "सोसायटी ऑफ वायो साइन्सेज मुजफ्फर नगर उ.प्र. द्वारा 25 नवम्बर 2000 को आनरेरी फेलोशिप से सम्मानित किया गया।

भ्रमण

विभिन्न प्रतिष्ठित व्यक्तियों द्वारा रा.शी.ज.मा.अनु. केन्द्र के भीमताल स्थित कार्यालय, प्रयोगशालाओं, पुस्तकालय, माहशीर मत्स्य बीज प्रक्षेत्र तथा संस्थान के चम्पावत स्थित छिरापानी मत्स्य प्रक्षेत्र का भ्रमण किया गया। डा.एम. सिन्हा, निदेशक सी.आई.एफ.आर.आई. बैरकपुर तथा प्रो. बी.एन. कपूर अधिशासी अध्येता, जन्तु विज्ञान विभाग, इलाहाबाद विश्वविद्यालय ने दिनांक 3.11.2000 को भीमताल स्थित अनुसंधान केन्द्र तथा हैचरी का भ्रमण किया।



संस्थान की माहसीर हैचरी में उपस्थित अतिथिगण

7 अक्टूबर 2000 को डिपार्टमेंट आफ इन्डस्ट्रियल फिश एण्ड फिशरीज, भुवनेश्वर के 21 छात्रों ने संस्थान के विभिन्न विभागों एवं प्रयोगशालाओं का भ्रमण किया तथा शीतजल मत्स्य एवं मात्स्यिकी पर सामान्य सूचनाएं प्राप्त की।

प्रकाशन

इस वर्ष अनुसंधान सलाहकार समिति के अध्यक्ष द्वारा संस्थान से प्रकाशित समाचार पत्र का नवीन संस्करण जारी किया गया तथा समिति के अन्य सदस्यों द्वारा हिन्दी में तैयार किए 6 अन्य तकनीकी पत्रों को भी निर्गत किया। हिन्दी कार्यशाला के अवसर पर हिन्दी में शीतजल मात्स्यिकी की विभिन्न सम्भावनाओं से सम्बन्धित 'विशेष प्रकाशन' का कार्यशाला के मुख्य अतिथि प्रो. बी.एस. राजपूत उपकुलपति कुमायू विश्वविद्यालय नैनीताल के कर कमलों द्वारा विमोचन कराया गया।

आयोजन

स्वतन्त्रता दिवस

संस्थान में 15 अगस्त 2000 को स्वतंत्रता दिवस मनाया गया। संस्थान के निदेशक ने मुख्य परिसर में झण्डा रोहण किया तथा अपने संबोधन में सभी सदस्यों को संस्थान के उद्देश्यों को प्राप्त करने के लिए कठिन परिश्रम करने को कहा। इस अवसर पर संस्थान के सदस्यों द्वारा अन्य क्रियाकलाप भी किए गए।

स्थानीय खेल

रा.शी.ज.मा.अनु. केन्द्र के सदस्यों ने भीमताल में आयोजित स्थानीय क्रिकेट प्रतियोगिता में भाग लिया तथा अपने उत्कृष्ट खेल का प्रदर्शन करते हुए अधिकांश लीग मैचों को जीतकर सेमीफाइनल में प्रवेश किया।

कर्मचारी समाचार

- डा. ए.के. सिंह ने राष्ट्रीय मत्स्य आनुवंशिक ब्यूरो, लखनऊ से कार्यमुक्त होकर रा.शी.ज.मा.अनु.के. भीमताल में वरिष्ठ वैज्ञानिक (मत्स्य एवं मात्स्यिकी विज्ञान) का कार्यभार ग्रहण किया।
- श्रीमती सुमन कपिला, वैज्ञानिक (जैव रसायन) का रा.शी.मा.अनु. केन्द्र में 5 वर्षों से अधिक निरन्तर सेवा के उपरान्त राष्ट्रीय अनुसंधान संस्थान (भा.कृ.अनु.परि.) करनाल में स्थानान्तरण हो गया। वह दिनांक 23.10.2000 को इस संस्थान से कार्यमुक्त हुई। संस्थान के सदस्यों द्वारा नवीन संस्थान में उनके उज्ज्वल भविष्य की कामना की।

बधाई

दिनांक 1 दिसम्बर 2000 को इस संस्थान के कर्मचारी श्री अमित कुमार जोशी, हिन्दी अनुवादक का विवाह संस्कार सम्पन्न हुआ। राष्ट्रीय शीतजल अनुसंधान केन्द्र के सभी सदस्य इस नवविवाहित युगल के सुखी वैवाहिक जीवन एवं उज्ज्वल भविष्य की कामना करते हैं।

शोक संवेदना

दिनांक 5 नवम्बर, 2000 को इस संस्थान के सहायक वर्ग के कर्मचारी श्री हेमचन्द्र भक्त का आकस्मिक निधन हुआ। श्री भक्त इस संस्थान के निष्ठावान एवं कुशल कार्यकर्ता थे। वे अपने पीछे अपनी पत्नी एवं 2 नन्हें शिशुओं को छोड़ गए हैं। रा.शी.ज.मा.अनु. केन्द्र के सभी सदस्य इस दुखी अवसर पर उनकी आत्मा की शान्ति हेतु ईश्वर से प्रार्थना करते हैं।

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