



**Dr. Pratap Chandra Das**

**Head, APE Division**

**E-mail- [pratapcdas@yahoo.com](mailto:pratapcdas@yahoo.com)**

<b>Department</b>	Aquaculture Production and Environment Division
<b>Institute/University</b>	Central Institute of Freshwater Aquaculture ( <i>Indian Council of Agricultural Research</i> )
<b>Address</b>	Central Institute of Freshwater Aquaculture (CIFA) P.O. - Kausalyaganga, Bhubaneswar- 751 002 Odisha, India.
<b>Date of Birth</b>	26 <sup>th</sup> March 1968
<b>Sex</b>	Male
<b>Tel</b>	
<b>Fax</b>	

## Educational Qualifications

Sl. No.	Degree	Year	Board/University	% Marks	Remarks
a.	H.S.C.	1983	Board of Secondary Education, Orissa	76.4	
b.	+2 Sc.	1985	Council of Higher Secondary Education, Orissa	60.1	
c.	B. F. Sc. (Bachelor of Fisheries Science)	1990	Orissa University of Agriculture and Technology (OUAT), Bhubaneswar, Orissa	79.5	1st class with Honours

<b>d.</b>	M. F.Sc. (Aquaculture)	1993	OUAT, Bhubaneswar, Orissa	80.5	1st class
<b>e.</b>	Ph. D. (Aquaculture)	2002	OUAT, Bhubaneswar, Orissa		Awarded

## Professional Experience

Sl. No.	Organization	Designation	Period
<b>a.</b>	Central Rice Research Institute, Cuttack (Indian Council of Agricultural Research)	Scientist	July, 1996 to July, 2002
<b>b.</b>	Central Rice Research Institute, Cuttack (ICAR)	Scientist (Senior Scale)	July, 2002 - 20 May, 2004
<b>c.</b>	Central Institute of Freshwater Aquaculture, Bhubaneswar (ICAR)	Scientist (Senior Scale)	21 May, 2004 - 8 <sup>th</sup> July, 2005
<b>d.</b>	Central Institute of Freshwater Aquaculture, Bhubaneswar (ICAR)	Senior Scientist	9 <sup>th</sup> July, 2005- till date

## Additional Qualifications/ Training

- i) Research Management and Administrative Training at National Academy of Agricultural Research Management, (August 1996 - January 1997), Hyderabad, India.
- ii) Workshop-cum-training on Pilot Project on “Technology Assessment and refinement through Institute Village Linkage Programme (IVLP)” organized at Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar during 27<sup>th</sup> March to 9<sup>th</sup> April, 1997.
- iii) Summer School on “Recent development in Biotechnology Application to Aquaculture and Fisheries” organised by Central Institute of Fisheries Education, Versova, Mumbai during 14<sup>th</sup> July to 3<sup>rd</sup> August, 1998.
- iv) Workshop-cum-training on Pilot Project on “Technology Assessment and refinement through Institute Village Linkage Programme (IVLP)” organized at Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar from 27<sup>th</sup> March to 9<sup>th</sup> April, 1997.

	<p>v) Undergone training in ‘Aquatic Microbiology and fish microbial Disease’ organised by Microbial Resource center (Aquaculture MIRCEN of UNESCO) at Central Institute of Freshwater Aquaculture, Bhubaneswar from 25<sup>th</sup> April to 1<sup>st</sup> May, 2000.</p> <p>vi) Summer School on “Environmental Impact Assessment and Management of Coastal Zones: an Integrated Approach” organized by Central Institute of Fisheries Education, Versova, Mumbai during 7- 27 August, 2001.</p> <p>vii) Training on “R/R/PRA to identify farm problems to formulate research and extension action plan in agriculture” organised by Farm and Rural Science Foundation, Hyderabad from 4-12 December, 2002.</p> <p>viii) Short Course on Arts and Science of Freshwater Pearl Culture at Central Institute of Freshwater Aquaculture, Kaushalyaganga, Bhubaneswar during 17-26 March, 2004.</p> <p>ix) Summer School on “Disease diagnosis and health management of freshwater fish and shellfish” organized by Central Institute of Freshwater Aquaculture, Kaushalyaganga, Bhubaneswar during 6-26 July, 2004.</p> <p>x) Training programme on ‘Developing managerial Competencies for the Scientific Personnel of CIFA’ during 5-7 January, 2011 at Xavier Institute of Management, Bhubaneswar.</p>
--	--

## Research Publications

<b>A</b>	<b>Dissertation and Thesis</b>	<p>i. B.F.Sc Dissertation: Effect of Light on The Gonadal Maturation of <i>Clarias batrachus</i></p> <p>ii. M.F.Sc (Aquaculture) Dissertation: Ovulatory Response of Indian Major Carps to Different Inducing Agents.</p> <p>iii. Ph.D. (Aquaculture) Thesis: Assessment of Stress Factors in Intensive Aquaculture</p>
<b>B</b>	<b>Research Papers</b>	<p>1. <b>Das, P.C.</b>, Jena, J.K., Mishra, B., Pati, B.K., 2012. Impact of aeration on the growth performance of silver Barb, <i>Puntius gonionotus</i> during fingerling rearing. <i>Journal of World Aquaculture Society</i>. 43(1), 128-134.</p> <p>2. <b>Das, P.C.</b>, Jena, J.K., Mishra, B., Sarangi, N., 2011. Impact of varied frequency of nitrogen fertilization on grow-out performance of <i>Labeo rohita</i> (Hamilton). <i>Aquaculture Research</i>, 42, 1859-1868.</p>

3. Jena, J.K., **Das, P.C.**, 2011. Grow-out performance of Kuria labeo, *Labeo gonius* (Hamilton) with major carps in carp polyculture system. *Aquaculture Research*, 42(9), 1332-1338.
4. Jena, J.K., **Das, P.C.**, Mitra, G, Patro, B., Mohanta, D., Mishra B., 2011 . Evaluation of growth performance of *Labeo fimbriatus* (Bloch), *L. gonius* (Hamilton) and *Puntius gonionotus* (Bleeker) in polyculture with *Labeo rohita* (Hamilton) during fingerlings rearing at varied densities. *Aquaculture* 319 (3-4), 493-496.
5. **Das, P.C.**, Jena J.K., Singh, T.K., Kar, S., Mitra, G., 2011. Notonectids as live food for olive barb, *Puntius sarana*: implication for aquatic insect control in carp seed rearing. *Journal of Applied Aquaculture*, 23, 231-237.
6. Nanda, N.B.P., **Das, P.C.**, Jena, J.K., Sahoo, P.K., 2010. Changes in certain haematological and enzymatic parameters of *Heteropneustes fossilis* to sub-lethal toxicity of rotenone. *Indian J. Fish.*, 57(1), 73-80.
7. Nanda, N.B.P., **Das, P.C.**, Jena, J.K., 2009. Use of Rotenone as Piscicide: Toxicity Levels in a Few Common Freshwater Predatory and Weed Fishes. *Journal of Applied Aquaculture*. 21(4), 241-249.
8. Pawar, N.A., Jena, J.K., **Das, P.C.**, Bhatnagar, D.D., 2009. Influence of duration of aeration on growth and survival of carp fingerlings during high density seed rearing. *Aquaculture* 290, 263-268.
9. **Das, P.C.**, Jena, J.K., Nanda, N.B.P., Bhatnagar, D.D., 2008. Cube root powder is a better piscicide than bleaching powder for pre-stocking carp nursery pond preparation. *Toxicology and Environmental Chemistry*. 92(1), 137-147.
10. Jena, J.K., **Das, P.C.**, Kar, S., Singh, T.K., 2008. Olive barb, *Puntius sarana* (Hamilton) is a potential candidate species for introduction into the grow-out carp polyculture system. *Aquaculture*, 280, 154-157.
11. Jena, J.K., **Das, P.C.**, Mondal, S., Das, R, 2007. Compatibility of silver barb *Puntius gonionotus* (Bleeker) with Indian major carps in a grow-out polyculture. *Aquaculture Research*, 38, 1061-1065.
12. Jena, J.K., **Das, P.C.**, Das, R, Mondal, S., 2007. Performance of olive barb, *Puntius sarana* (Hamilton) in fingerling rearing with rohu, *Labeo rohita* (Hamilton) and mrigal, *Cirrhinus mrigala* (Hamilton). *Aquaculture*, 265, 305-308.

13. Sahu, P.K., Jena, J.K., **Das, P.C.**, 2007. Nursery rearing of kalbasu, *Labeo calbasu* (Hamilton), at different stocking densities in outdoor concrete tanks. *Aquaculture Research*, 38, 188-192.
14. Sahu, P.K., Jena, J.K., **Das, P.C.**, Mondal, S., Das, R, 2007. Production performance of *Labeo calbasu* (Hamilton) in polyculture with three Indian major carps *Catla catla* (Hamilton), *Labeo rohita* (Hamilton) and *Cirrhinus mrigala* (Hamilton) with provision of fertilizers, feed and periphytic substrate as varied inputs. *Aquaculture*, **262**, 333-339.
15. Sinhababu, D. P., **Das, P. C.**, 2007. Rice-fish farming system for increasing farm productivity and income in rainfed lowland areas of eastern India – a case study. *Journal of Aquaculture*, 15, 1-10.
16. **Das, P.C.**, Ayyappan, S., Jena, J.K., 2006. Haematological changes in the three Indian major carps, *Catla catla* (Hamilton), *Labeo rohita* (Hamilton) and *Cirrhinus mrigala* (Hamilton) exposed to acidic and alkaline water pH. *Aquaculture*, **256**, 80-87.
17. **Das, P.C.**, Ayyappan, S., Jena, J.K., 2005. Sub-lethal ammonia toxicity in fingerlings of two Indian major carps, viz., *Catla catla* (Ham.) and *Labeo rohita* (Ham.): effect on certain hematological parameters and enzymatic activities. *J. Aqua.*, **13**, 79-92.
18. **Das, P.C.**, Jena, M., Sinhababu, D.P., 2005. Acute toxicity of botanical pesticides, viz., neem oil (*Azadirachta indica*) and *Polygonum hydropiper* leaf extracts, in fingerlings of *Catla catla* (Ham.). *J. Aqua.*, **13**, 17-21.
19. Rautaray, S.K., **Das, P.C.**, Sinhababu, D.P., 2005. Increasing farm income through rice (*Oryza sativa*)-fish based integrated farming system in rainfed lowlands of Assam. *Indian J Agric Sci*, **75**(2), 79-82.
20. **Das, P.C.**, Ayyappan, S., Jena, J.K., 2005. Comparative changes in water quality and role of pond soil after application of different levels of organic and inorganic inputs. *Aquaculture Research*, **36**, 785-798.
21. **Das, P.C.**, Sinhababu, D.P., Singh, D.P., Sahu, P.K., 2004. Utilisation of sundried *Azolla caroliniana* in substituting groundnut oilcake in the conventional carp feed. *J. Aqua.*, 12, 43-47.
22. **Das, P.C.**, Ayyappan, S., Das, B.K., Jena, J.K., 2004. Effect of sub-lethal nitrite toxicity on the haematological parameters of fingerlings of rohu, *Labeo rohita* (Ham.). *Indian Journal of Fisheries*, **51** (3), 287-294.



23. **Das, P.C.**, Ayyappan, S., Jena, J.K., Singh, S.K., Patamajhi, P., Muduli, H.K., 2004. Effect of aeration on production and water quality changes in intensive carp culture. *Indian Journal of Fisheries*, **51** (2), 173-183.
24. **Das, P.C.**, Ayyappan, S., Das, B.K., Jena, J.K., 2004. Nitrite toxicity in Indian major carps: Sub-lethal effect on selected enzymes in fingerlings of *Catla catla* (Ham.), *Labeo rohita* (Ham.) and *Cirrhinus mrigala* (Ham.). *Comparative Bio-chemistry and Physiology* **138** (1), 3-10.
25. **Das, P.C.**, Ayyappan, S., Jena, J.K., Das, B.K., 2004. Effect of sub-lethal nitrite on selected haematological parameters in fingerlings of *Catla catla* (Hamilton). *Aquaculture Research*, **35**, 874-880.
26. **Das, P.C.**, Ayyappan, S., Jena, J.K., Das, B.K., 2004. Nitrite toxicity in *Cirrhinus mrigala* (Ham.): Acute toxicity and sub-lethal effect on selected haematological parameters. *Aquaculture*, **235**(1-4), 633-644.
27. **Das, P.C.**, Ayyappan, S., Jena, J.K., Das, B.K., 2004. Acute toxicity of ammonia and its sub-lethal effects on selected haematological and enzymatic parameters of mrigal, *Cirrhinus mrigala* (Hamilton). *Aquaculture Research*, **35**, 134-143.
28. **Das, P.C.**, Ayyappan, S., Jena, J.K., 2003. Oxygen consumption pattern of fingerlings of Indian major carps, *Catla catla* (Ham.), *Labeo rohita* (Ham.) and *irrhinus mrigala* (Ham.). *Journal of Inland Fisheries Society of India*, **35**(2), 45-49.
29. **Das, P.C.**, Ayyappan, S., Das, B.K., Jena, J.K., 2002. Histopathological changes associated with sublethal toxicity in fingerlings of the Indian major carps. *Journal of Aquaculture*, **10**, 9-19.
30. Saha, Sanjoy, Sinhababu, D.P., **Das, P.C.** 2000. Influence of potassium on the performance of watermelon (*Citrullus lanatus*) after rice in rainfed lowland rice-fish system. *Journal of Potassium Research*. **16**: 68-69.
31. **Das, P.C.**, Sinhababu, D.P., 1999. Seasonal changes in the zooplankton population in rainfed rice-fish system. *J. Aqua.*, **7**: 55-58.
32. **Das, P.C.**, Rath, R.K., 1999. Effect of exogenous hormones in combination with dopamine antagonists in breeding of Indian Major Carps. *J. Aqua.*, **7**: 1-10.

		<p>33. Thomas, P.C., Pati, D., Sahoo, J.K., <b>Das, P.C.</b>, 1991. Experimental study on the role of environmental factors on gonadal maturation of the catfish, <i>Clarius batrachus</i> 1. Effect of blinding and/or total darkness on gonadal maturation. <i>Proc. Nat. Symp. Freshwat. Aqua.</i>, 53-54.</p>
<p><b>C</b></p>	<p><b>Papers presented in Symposia/ Workshop</b></p>	<p><b>Lead Paper</b></p> <p>1. <b>Das, P.C.</b>, Jena, J.K. and Eknath, A.E., 2009. Water Management for Sustainable Aquaculture. In: Proceedings of International Workshop on 'Water Quality Research to Evaluate the Effects of Agricultural Conservation Practices Utilized in the United States and India' during 7-8 September at Allahabad Agricultural Institute, Allahabad. .</p>
		<p><b>Regular Paper</b></p> <p>1. <b>Das, P. C.</b>, Jena, J. K., Kar, S., Singh T.K. and Mitra, G., 2008. <i>Puntius sarana</i> as a candidate for aquatic insect control. <b>P-APE 63</b> 8th Indian Fisheries Forum 2008, Kolkata, West Bengal, 23 September 2008.</p> <p>2. Adhikari, S., Pani, K.C., Jena, J.K., Mishra, B., <b>Das, P.C.</b>, 2008. Tentative budget of carbon, nitrogen and phosphorus in carp culture ponds. <b>O-APE 71</b>. 8th Indian Fisheries Forum 2008, Kolkata, West Bengal, 23 September 2008</p> <p>3. Jena, J. K., <b>Das, P. C.</b>, Mitra, G, Patro, B., Bhatanagar D. and Mishra. B., 2008. Evaluation of varied stocking densities in nursery rearing of fringe lipped carp, <i>Labeo fimbriatus</i>. P-APE 62. 8th Indian Fisheries Forum 2008, Kolkata, West Bengal, 23 September 2008.</p> <p>4. Adhikari, S., Pani, K.C., Jena, J.K., Mishra, B., Muduli, H.K., <b>Das, P.C.</b>, Sarangi, N., 2007. Nutrient budget in spawn and fry rearing of carps in ponds. 8th Asian Fisheries Forum, 20-23 November, 2007, Kochi, India. 119p.</p> <p>5. Jena, J. K., <b>P. C. Das</b> and B. Mishra, 2007. Performance of major carps in response to varied input provision during outdoor fingerlings rearing. 8th Asian Fisheries Forum, 20-23 November, 2007, Kochi, India. 132p.</p> <p>6. Mohanty, P.K., Jena, J.K., <b>Das, P.C.</b>, Adhikari, S., Mandal, R.N. and Sarangi, N., 2006. Biodiversity assessment of the river Devi, Orissa. Abstract: National Consultation on Water Management in Fisheries and Aquaculture. 23-24 June, 2006. NAAS, New Delhi. p. 50.</p>

7. Mohanty, P.K., Mandal, R.N., **Das, P.C.**, Adhikari, S., Jena, J.K. and Sarangi, N., 2006. Little known mangrove at Devi river estuary, Orissa: need for conservation. Abstract: National Consultation on Water Management in Fisheries and Aquaculture. 23-24 June, 2006. NAAS, New Delhi. p. 49.
8. Sahu, P. K., J. K. Jena, P. C. Das and H. K. Muduli, 2005. Performance of kalbasu, *Labeo calbasu* in fingerling rearing under polyculture systems. The Seventh Indian Fisheries Forum, 8-12 November, 2005, Bangalore, India.
9. Sinhababu, D.P., Saha, Sanjoy, Agarwal, P.K., Samal, P., Mahata, K.R., **Das, P.C.** and Singh, B.N., 2004. Improving productivity in super-cyclone affected coastal areas of Orissa through farmers' participatory technological interventions. In: *Abstract*. p. 72. National Seminar on Advances in Coastal Agriculture and Value Addition from National Perspectives. 21-24 January. Central Plantation Crop Research Institute, Kasaragod, Kerala, India.
10. Rautaray, S.K., Sinhababu, D.P. and **Das, P.C.**, 2004. Irrigation requirement of *boro* rice under rice-fish farming system in lower Assam. In: *Abstracts*. p. 106. National symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Cuttack, India.
11. Sinhababu, D.P. and **Das, P.C.**, 2004. Increasing farm productivity and income through rice-fish farming system in rainfed lowlands of coastal Orissa. In: *Abstracts*. p. 103. National Symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, B Cuttack, India.
12. **Das, P.C.**, Sinhababu, D.P., Sahu, P.K. and Dhua, U., 2004. Growth of carp fry using false smut balls from infected rice crop as an ingredient in their diet. In: *Abstracts*. p. 103. National Symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Cuttack, India.
13. **Das, P.C.**, Sinhababu, D.P., Singh, D.P. and Sahu, P.K., 2004. Use of *Azolla* as an ingredient in diet of freshwater carp, In: *Abstracts*. p. 104. National Symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Cuttack, India.
14. Rautaray, S.K., Sinhababu, D.P. and **Das, P.C.**, 2004. Identification of suitable rice varieties foe *Sali* season under organic-based rice-fish farming system in Assam. In: *Abstracts*. p. 102. National Symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Cuttack, India.



		<p>15. <b>Das, P.C.</b>, Jena, M. and Sinhababu, D.P., 2004. Acute toxicity of botanical pesticides, viz., neem oil (<i>Azadirachta indica</i>) and <i>Polygonum hydropiper</i> leaf extracts, in fingerlings of <i>Catla catla</i> (Ham.). In: <i>Abstract</i>. p. 65. National Seminar on Responsible Fisheries. 12-13 February. College of Fisheries, Berhampur, Orissa, India.</p> <p>16. Sinhababu, D.P., <b>Das, P.C.</b>, Mallick, P.K. and Sahu, P.K., 2004. Rice–fish diversified farming system for higher productivity in rainfed lowlands. In: <i>Abstract</i>. p. 65. National Seminar on Responsible Fisheries and Aquaculture. 12-13 February. College of Fisheries, Berhampur, Orissa, India.</p> <p>17. <b>Das, P.C.</b>, Ayyappan, S., Das, B.K. and Jena, J.K., 2004. Sub-lethal ammonia toxicity in fingerlings of two Indian major carps, viz., <i>Catla catla</i> (Ham.) and <i>Labeo rohita</i> (Ham.). In: <i>Abstract</i>. p. 65. National Seminar on Responsible Fisheries. 12-13 February. College of Fisheries, Berhampur, Orissa, India.</p> <p>18. Sinhababu, D.P. and <b>Das, P.C.</b>, 2002. Rice-fish farming system in rainfed lowlands: An economic approach for higher and sustainable food production. . In: <i>Abstract</i>. p 60. VI AZRA Conference on Advances in Applied Zoological Researches for Food Production and Environmental Safety. 19<sup>th</sup>-22<sup>nd</sup> December.</p> <p>19. Sinhababu, D.P. and <b>Das, P.C.</b>, 2002. Farmer's participatory sustainable management of catchment area of Chilika lagoon by adoption of rice-fish farming system. Souvenir of International Workshop on Restoration of Chilika Lagoon. 18<sup>th</sup>-20<sup>th</sup> January, 2002. p 31.</p> <p>20. Sinhababu, D.P., Saha, Sanjoy and <b>Das P.C.</b>, 1998. Performance of watermelon after rice in rainfed rice-fish system. In: <i>Abstract. National Symposium on Rice Research for 21<sup>st</sup> Century, Challenges, Priorities and Strategies</i> held at CRRI, Cuttack during 5-7 1998: 57-58 pp.</p>
<b>D</b>	<b>Books written/edited/compiled</b>	<p>1. Jena, J.K., <b>Das, P.C.</b>, Das, B.K., Mohapatra, B.C., Sarangi, N., Modayil, M.J., Vass, K.K., Ravichandran, P., Ponniah, A.G., Syda Rao, G., Eknath, A.E. and Ayyappan, S., 2009. <i>Aquaculture Technologies for Farmers</i>. Revised Edition, ICAR, New Delhi. pp. 126.</p> <p>2. Sahoo, P.K., J. Mohanty, <b>P.C. Das</b>, K.N. Mohanta, N.K. Barik, 2012. <i>CIFA: 25 Year of Freshwater Aquaculture Research</i>, CIFA, Bhubaneswar. pp 196.</p>

E	Book chapters	<ol style="list-style-type: none"> <li>1. Das Mahapatra, K., <b>Das, P.C.</b>, Routray, P., Das, P., Sahoo, P.K., Barik, N.K., Punniyah, A.G., 2012. Broodstock management and dissemination of improved fish breeds to promote aquaculture in SAARC countries: India. In: -----</li> <li>2. Jayasankar, P., <b>Das, P.C.</b>, 2012. Diversification of Freshwater Aquaculture in India. <b>In:</b> Ravisankar, T., Ambasankar, K. (Ed.), <i>Souvenir, National Conference on New Vistas in Indian Aquaculture in Commemoration of Silver Jubilee Celebration of CIBA</i>. 23-24 February, Chennai, p 1-10.</li> <li>3. Jena, J.K. and Das, P.C., 2009. Carp culture. In: Hand Book of Fisheries and Aquaculture. Directorate of Information and Publications of Agriculture, Indian Council of Agricultural Research, New Delhi. pp. 265-282.</li> <li>4. Jena, J.K., Mitra, G., Patro, B., Mohanta, D., Mishra, B. and <b>Das, P.C.</b>, 2009. Outdoor larval rearing of fringe-lipped carp, <i>Labeo fimbriatus</i> (Bloch) with provision of different inputs. In: Larvi '2009. Fish and Shellfish Larvae Culture Symposium (Eds. C.I. Hendry, G. Van Stappen, M. Wille and P. Sorgeloos), <i>European Aquaculture Society, Special Publication No. 38</i>, 81-84, Oostende, Belgium.</li> <li>5. Jena, J.K., <b>Das, P.C.</b> and Sarangi, N., 2008. Freshwater aquaculture in India: Status and scope. In: Bioed Survey of Indian Agriculture. Divedi B.K., Singh G., Mishra, S.D., Mishra I. (Eds.). Proceedings of 10<sup>th</sup> Indian Agricultural Scientists and Farmers' Congress. 16-17 February, 2008. pp 74-77.</li> <li>6. Mandal, R.N., Jena, J.K., <b>Das, P.C.</b>, Adhikari, S., Mohanty, P. and Sarangi, N., 2008. Eco-floristic survey of mangrove patch at Devi river estuary, Orissa. In: Proceedings of Symposium on Wetland and Mangrove Biodiversity in Orissa Coast. Gupta, N. and Mahapatra, A.K. (Eds.), 3-4 April, RPRC, Bhubaneswar, India. pp. 31-35.</li> <li>7. Jena, J.K. and <b>Das, P.C.</b>, 2011. Carp culture. In: Hand Book of Fisheries and Aquaculture, pp 1116 (Second Revised Edition). Directorate of Knowledge Management in Agriculture (DKMA), Indian Council of Agricultural Research, New Delhi. p 380-400.</li> <li>8. Ayyappan, S., Sarangi, N., Sinhababu, D.P., <b>Das, P.C.</b> and Jena, J.K., 2004. Rice-fish Farming: An economic enterprise for lowland rice farmers. In: Proceedings of the National Symposium on Recent Advances in Rice-based Farming Systems, November 17-19, Cuttack, India. pp. 190-201.</li> </ol>
---	---------------	--

		<p>9. Sinhababu, D.P., <b>Das, P.C.</b>, Rautray, S.K. and Singh, B.N., 2001. Possibility of improved integrated rice-fish-horticulture-duck farming system for improving profitability in rainfed lowlands of Assam. In: Proceedings of the Workshop on "Integration of Fish-Biodiversity Conservation and Development of Fisheries in North Eastern Region through Community Participation". Mohanta, P.C. and Tyagi, L.K. (Eds.).12-13 December, Guwahati, India. pp. 140-145.</p>
<p><b>F</b></p>	<p><b>Popular Articles</b></p>	<ol style="list-style-type: none"> <li>1. Jayasankar, P., <b>Das, P.C.</b>, 2012. Diversification of Freshwater Aquaculture in India. <i>Fishing Chimes</i>, 32(1), 54-59.</li> <li>2. Misra, B., <b>Das, P.C.</b>, Jena, J.K., Chandra, S., Eknath, A.E., 2010. <i>Mithajala jibapalana prakshetra prabandhan</i> (in Hindi) (Aquaculture in freshwater pond), <i>Nilitima</i>, 7, 21-23.</li> <li>3. Eknath A. E., Das P.C. and Jena, J.K., 2009. Freshwater Aquaculture- Challenge and Prospects.In. INFISH 2009 Souvenir, Indian Fish Festival, 11-13 July, 2009. National Fisheries Development Board, Hyderabad. p 17-22</li> <li>4. Mandal, R. N., <b>Das, P.C.</b>, Mukhopadhyay, P. K., 2007. Water hyacinth - a little known role and potential in aquatic ecosystems. <i>Aquaculture Asia</i>, July-September 2007, XII (3), 29-31.</li> <li>5. Sarangi, N., <b>Das, P.C.</b>, 2007. Diversified freshwater fish farming systems: Present Status in Relation to Research Inputs. <i>Fishing Chimes</i>, 27 (1), 58-63.</li> <li>6. Jena, J.K., Das, P.C., Sarangi, N., 2007. Carp farming: avenues for rural livelihood and farm entrepreneurship. <i>Indian Farming</i>, 56 (10), 25-27.</li> <li>7. Jena, J.K. and <b>Das, P.C.</b>, 2007. Carp seed rearing: a profitable practice for small-scale farmers. <i>Indian Farming</i>, 56 (10), 19-22.</li> <li>8. Jena, J.K., <b>Das, P.C.</b>, 2006. Freshwater Fish farming in Orissa: Technology verses practice. <i>Souvenir</i>, Orissa Fisheries Extension Officers Association, Cuttack, 30-34.</li> <li>9. Jena, J.K., <b>Das, P.C.</b>, Chandra, S., Sarangi, N., 2005. <i>Karp palana se munafa hi munafa</i>. (Profit is assured through carp culture) <i>Kheti</i>, May, 2005. 25-27. (<i>in Hindi</i>).</li> <li>10. Jena, J.K., <b>Das, P.C.</b>, Chandra S., 2005. <i>Talabon ki sahi dekhbhal, kare malamal</i> (Proper pond management leads to higher profit), <i>Kheti</i>, May, 2005. 18-21. (<i>in Hindi</i>).</li> </ol>

		<p>11. Jena, J.K., <b>Das, P.C.</b>, Chandra S., 2005. <i>Mithe pani me moti ki kheti</i> (Pearl production in Freshwater), <i>Kheti</i>, April, 2005. 11-14. (<i>in Hindi</i>).</p>
<p><b>G</b></p>	<p><b>Research Abstracts: 23 Nos.</b></p>	<p>1. Jena, J.K., Das, P.C., Mitra, G., Patro, B., Mohanta, D, Mishra, B., 2011. Evaluation of growth performance and compatibility of <i>labeo fimbriatus</i> with major carps in polyculture system. X Agricultural Science Congress during 8-10 February, 2011 at NBFGR, Lucknow.</p> <p>2. Bej, D., Sahoo, L., Swain, S., Das, S.P., Das, P., Jayasankar, P., Chaudhary, B.K., Das, P.C., Routray, P., Swain, S.K., Jena, J.K., Eknath, A.E., Lakra, W.S., 2011. Mitochondrial genome sequence of Indian major carp, <i>Labeo rohita</i>. Abstract No. XASC368. X Agricultural Science Congress during 8-10 February, 2011 at NBFGR, Lucknow.</p> <p>3. Das, S.P., Bej, D., Swain, S., Jayasankar, P., Das, P., Chaudhary, B.K., Jena, J.K., Routray, P., Swain, S.K., Das, P.C., Eknath, A.E., Lakra, W.S., 2011. Comparative and evolutionary analysis of mitochondrial genes in Indian major carps. Abstract No. XASC369. X Agricultural Science Congress during 8-10 February, 2011 at NBFGR, Lucknow.</p> <p>4. Das, P.C., Jena, J.K., Mishra B., Pati B. K., 2011. Grow-out monoculture of olive barb <i>Puntius sarana</i> (Hamilton) at varied stocking densities. Asian-Pacific Aquaculture &amp; giant prawn, 17-20 December, 2011, Kochi, India. p-104.</p> <p>5. Jena, J.K., Mitra, G., Patro, B., Mohanta, D, Das, P.C., 2011. Evaluation of different carbohydrate and protein levels in fringe lipped carp <i>Labeo fimbriatus</i> fry. Asian-Pacific Aquaculture &amp; giant prawn, 17-20 December, 2011, Kochi, India. p-216.</p> <p>6. Jena, J. K., <b>Das, P. C.</b>, Mitra, G, Patro, B., Bhatanagar D. and Mishra. B., 2008. Evaluation of varied stocking densities in nursery rearing of fringe lipped carp, <i>Labeo fimbriatus</i>. <b>P-APE 62</b>. 8th Indian Fisheries Forum 2008, Kolkata, West Bengal, 23 September 2008.</p> <p>7. Adhikari, S., Pani, K.C., Jena, J.K., Mishra, B., Das, P.C., Eknath, A.E., 2008. Tentative budget of carbon, Nitrogen and phosphorus in carp culture pond. <b>O-APE 71</b>. 8th Indian Fisheries Forum 2008, Kolkata, West Bengal, 23 September 2008.</p> <p>8. Das, P. C., Jena, J. K., Kar, S., Singh T.K. and Mitra, G., 2008. <i>Puntius sarana</i> as a candidate for aquatic insect control. <b>P-APE 63</b>. 8th Indian Fisheries Forum 2008, Kolkata, West Bengal, 23</p>

September 2008.

9. Adhikari, S., Pani, K.C., Jena, J.K., Mishra, B., Muduli, H.K., Das, P.C., Sarangi, N., 2007. Nutrients budget in spawn and fry rearing of carps in ponds. 8th Asian Fisheries Forum, 20-23 November, 2007, Kochi, India.
10. Jena, J. K., **P. C. Das** and B. Mishra, 2007. Performance of major carps in response to varied input provision during outdoor fingerlings rearing. 8th Asian Fisheries Forum, 20-23 November, 2007, Kochi, India. 132p.
11. Mohanty, P.K., Jena, J.K., **Das, P.C.**, Adhikari, S., Mandal, R.N. and Sarangi, N., 2006. Biodiversity assessment of the river Devi, Orissa. Abstract: National Consultation on Water Management in Fisheries and Aquaculture. 23-24 June, 2006. NAAS, New Delhi. p. 50.
12. Mohanty, P.K., Mandal, R.N., **Das, P.C.**, Adhikari, S., Jena, J.K. and Sarangi, N., 2006. Little known mangrove at Devi river estuary, Orissa: need for conservation. Abstract: National Consultation on Water Management in Fisheries and Aquaculture. 23-24 June, 2006. NAAS, New Delhi. p. 49.
13. Rautaray, S.K., Sinhababu, D.P. and **Das, P.C.**, 2004. Irrigation requirement of *boro* rice under rice-fish farming system in lower Assam. *In: Abstracts*. p. 106. National symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Bhubaneswar, India.
14. **Das, P.C.**, Sinhababu, D.P., Singh, D.P. and Sahu, P.K., 2004. Use of *Azolla* as an ingredient in diet of freshwater carp, *In: Abstracts*. p. 104. National symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Bhubaneswar, India.
15. **Das, P.C.**, Sinhababu, D.P., Sahu, P.K. and Dhua, U., 2004. Growth of carp fry using false smut balls from infected rice crop as an ingredient in their diet. *In: Abstracts*. p. 103. National symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Bhubaneswar, India.
16. Sinhababu, D.P. and **Das, P.C.**, 2004. Increasing farm productivity and income through rice-fish farming system in rainfed lowlands of coastal Orissa. *In: Abstracts*. p. 103. National symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Bhubaneswar, India.
17. Rautaray, S.K., Sinhababu, D.P. and **Das, P.C.**, 2004. Identification of suitable rice varieties for *Sali* season under



- organic-based rice-fish farming system in Assam. *In: Abstracts*. p. 102. National symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Bhubaneswar, India.
18. Sinhababu, D.P., Saha, Sanjoy, Agarwal, P.K., Samal, P., Mahata, K.R., **Das, P.C.** and Singh, B.N., 2004. Improving productivity in super-cyclone affected coastal areas of Orissa through farmers' participatory technological interventions. *In: Abstract*. p. 72. National Seminar on Advances in Coastal Agriculture and Value Addition from National Perspectives. 21-24 January. Central Plantation Crop Research Institute, Kasaragod, Kerala, India.
  19. Sinhababu, D.P., **Das, P.C.**, Mallick, P.K. and Sahu, P.K., 2004. Rice-fish diversified farming system for higher productivity in rainfed lowlands. *In: Abstract*. p.65. National Seminar on Responsible Fisheries and Aquaculture. 12-13 February. College of Fisheries, Berhampur, Orissa, India.
  20. **Das, P.C.**, Jena, M. and Sinhababu, D.P., 2004. Acute toxicity of botanical pesticides, viz., neem oil (*Azadirachta indica*) and *Polygonum hydropiper* leaf extracts, in fingerlings of *Catla catla* (Ham.). *In: Abstract*. p. 65. National Seminar on Responsible Fisheries. 12-13 February. College of Fisheries, Berhampur, Orissa, India.
  21. **Das, P.C.**, Ayyappan, S., Das, B.K. and Jena, J.K., 2004. Sub-lethal ammonia toxicity in fingerlings of two Indian major carps, viz., *Catla catla* (Ham.) and *Labeo rohita* (Ham.). *In: Abstract*. p. 65. National Seminar on Responsible Fisheries. 12-13 February. College of Fisheries, Berhampur, Orissa, India.
  22. Sinhababu, D.P. and **Das, P.C.**, 2002. Rice-fish farming system in rainfed lowlands: An economic approach for higher and sustainable food production. *In: Abstract*. p 60. VI AZRA Conference on Advances in Applied Zoological Researches for Food Production and Environmental Safety. 19<sup>th</sup>-22<sup>nd</sup> December.
  23. Sinhababu, D.P. and **Das, P.C.**, 2002. Farmer's participatory sustainable management of catchment area of Chilika lagoon by adoption of rice-fish farming system. *In: Souvenir of International Workshop on Restoration of Chilika Lagoon*. 18<sup>th</sup>-20<sup>th</sup> January, 2002. p 31.
  24. Sinhababu, D.P., Saha, Sanjoy and **Das P.C.**, 1998. Performance of watermelon after rice in rainfed rice-fish system. *In: Abstract, National Symposium on Rice Research for 21<sup>st</sup> Century, Challenges, Priorities and Strategies* held at CRRI, Cuttack during 5-7 1998: 57-58 pp.

<b>H</b>	<b>Technology Bulletin</b>	<ol style="list-style-type: none"> <li>1. Sinhababu, D.P. and <b>Das, P.C.</b>, 2004. Rice-Fish farming System for Rainfed Lowland Areas. CRRI Technology Bulletin 8 (Revised) pp 4.</li> <li>2. Mechanical Pond Applicator (A gadget for large aquaculture pond) - Prepared by <b>P.C. Das</b></li> <li>3. <i>Carp machha chasa</i> (Carp Fish Farming in Odia). Prepared by <b>P.C. Das</b>, S.C. Rath and A.E. Eknath.</li> </ol>
<b>I</b>	<b>Involvement In Institutional Consultancy Project And Document Preparation</b>	<ol style="list-style-type: none"> <li>1. 'Evaluation of ENT-133 Rotenone as a Piscicide in Freshwater Culture Ponds'</li> <li>2. Preparation of 'Development Plan for Freshwater Aquaculture in Orissa' submitted to United Nations Development Programme (UNDP), Orissa Hub, UN House-II, Bhubaneswar <ol style="list-style-type: none"> <li>(a) 'Freshwater carp farming, culture of air-breathing fishes, freshwater prawn farming, freshwater pearl culture and production, and cage culture of carps' - by <i>N. Sarangi, J.K. Jena and P.C. Das</i>, 2006.</li> <li>(b) 'Status of fish seed production in Orissa and the future strategies for augmenting the availability of right type of seed at the right time for culture purpose including seed certification' - by <i>J.K. Jena, S. D. Gupta, P.C. Das, S.C. Rath and N. Sarangi</i>, 2006.</li> <li>(c) Infrastructure support facilities- present status and future needs for culture fisheries and related harvest, post-harvest and marketing support in Orissa - by <i>N. Sarangi, J.K. Jena and P.C. Das</i>, 2006.</li> </ol> </li> <li>3. 'Plan for Fisheries Development in Jharkhand' - by <i>N. Sarangi, A.K. Singh, J.K. Jena, P.C. Das</i> and <i>P. Kumaraiah</i>, 2006.</li> <li>4. Preparation of Project Report on 'Study on Aquatic and Marine fauna and Impact of Construction of Naraj Barrage Project Across River Kathajuri' funded by Govt. of Orissa – by <i>N. Sarangi, J.K. Jena, S. Adhikari, R.N. Mandal and P.C. Das</i>, 2005.</li> </ol>

## Contributions to the Field of Fisheries Science

<b>A</b>	<b>Research projects associated</b>	<p><b>a. Institute-based projects</b></p> <p><b>b. Externally funded project</b></p> <ol style="list-style-type: none"> <li>1. Front line demonstration on rice-fish culture funded by Department of Agricultural Co-operation, Ministry of Agriculture, Govt. of India/ Directorate of Rice Research, Hyderabad and ICDP-Rice from January, 1998 to September, 1998.</li> <li>2. On farm research on rice-fish system in rainfed lowland (under NWDPRRA) from May, 1997 to September, 1998.</li> <li>3. Institute village linkage programme (27<sup>th</sup> March, 1997 to 25<sup>th</sup> October, 1998)</li> <li>4. Management of coastal agro eco-system affected by super-cyclone in Orissa (January, 2002 to May, 2004) (NATP)</li> <li>5. Evaluation of production performance of a few medium carp species under mono and polyculture system (AP Cess)</li> <li>6. Development of protocol for organic farming of carps and freshwater prawns (AP Cess)</li> </ol>
<b>B</b>	<b>Training programmes conducted</b>	<ol style="list-style-type: none"> <li>1. Organising Secretary, Workshop on ‘The Recent Advances in Freshwater Aquaculture Production System and Water Quality Management’ jointly organised by CIFA and Association of Aquaculturist, Bhubaneswar at CIFA during 17-18 July, 2007</li> <li>2. Co-ordinated the CIFA-DSR three-days training programme ‘<i>Purvi Uttar Pradesh Mein Labhdayak Matsya Palan</i> (Beneficial Aquaculture in Eastern Uttar Pradesh)’ at Directorate of Seed Research, Mau, Uttar Pradesh during 14-16 December, 2006.</li> <li>3. Co-ordinated ‘Short Course on rice-fish farming system during 20-29 November, 2003’</li> <li>4. Co-ordinated ‘Short Course on rice-fish farming system during 16-25 September, 2003’.</li> <li>5. Radio talk on rice-fish farming ‘<i>BARSADHARA KHALUA JAMIRE MACHHA SAHITA DHANA CHASA-DISCUSSION</i>’ in Krushi Sansar Programme of All India Radio, Cuttack on 15.07.2003.</li> </ol>

	<p>6. Telecast on rice-fish farming on Doordarsan on 'KHALUA JAMIRE DHANA O MACHHA CHASA' in PALLISHREE PROGRAMME of Door Darsan Kendra, Bhubaneswar on 23.07.2003.</p> <p>7. Periodically associated with training the farmers of Self Help groups (SHGs) on carp culture at the Institute.</p>
--	--

<p><b>National/ International Conferences/ Seminars/ Symposiums/ Workshops Attended</b></p>	<p><b>International</b></p> <p>(i) International Workshop on Restoration of Chilika Lagoon. 18<sup>th</sup>-20<sup>th</sup> January, 2002, Bhubaneswar, Orissa, India.</p> <p>(ii) <i>The 6<sup>th</sup> Annual American Fisheries Society Student Colloquium</i>, 27-28 October, 2006 at Forestry &amp; Wildlife Sciences Building, Auburn University, Alabama, USA.</p> <p>(iii) 20<sup>th</sup> Anniversary International Symposium of World Food Prize, 2006 at Hall of Laureates, Iowa, USA during 18-20 October, 2006.</p> <p>(iv) <i>The 8<sup>th</sup> Asian Fisheries Forum</i>, 20-23 November, 2007, Kochi, India.</p>
	<p><b>National</b></p> <p>(i) <i>National Symposium on Rice Research for 21<sup>st</sup> Century, Challenges, Priorities and Strategies</i> held at CRRI, Cuttack during 5-7 February, 1998.</p> <p>(ii) <i>The Fifth Indian Fisheries Forum</i> from 17-20 January, 2000 at Central Institute of Freshwater Aquaculture, Bhubaneswar, Orissa.</p> <p>(iii) National Seminar on Responsible Fisheries. 12-13 February, 2004. College of Fisheries, Berhampur, Orissa, India.</p> <p>(iv) Attended one day Work Shop on "Integrated Fish farming and Aquaculture Development in Jharkhand" on 04.10. 2004 as Resource Person at College of Vateriairny Science and Animal Husbandry, B.A.U., Ranchi, Jharkhand.</p> <p>(v) National Symposium on Recent Advances in Rice-based Farming Systems, November 17-19, 2004, Cuttack, India. pp. 190-201.</p> <p>(vi) <i>The Seventh Indian Fisheries Forum</i> from 8-12 November, 2005 at Karnataka Veterinary, Animal &amp; Fisheries Sciences University, Hebbal, Bangalore.</p> <p>(vii) <i>The 8<sup>th</sup> Indian Fisheries Forum</i>, 22-26 November, 2008, Kolkata, India.</p>

<b>Foreign Deputation</b>	<p>(i) NAIP sponsored three months training on Carbon Sequestration/Carbon trading/ Climate Change at Institute of Aquaculture, University of Stirling, Scotland, UK from 01.05.2011 to 31.07.2011.</p> <p>(ii) As a Norman E. Borlaug Fellow, 2006, deputed to the Department of Fisheries and Allied Aquaculture, Auburn University, Alabama, USA for training on <i>Water Management and Waste Water Usage in Aquaculture</i> under the Mentorship of Prof. C.E. Boyd, during 5<sup>th</sup> October–6<sup>th</sup> November, 2006 under the Norman E. Borlaug International Agricultural Science and Technology Fellows Program of the Indo-US Agricultural Knowledge Initiative (AKI).</p>
<b>Patents/ Design registration</b>	<b>Design patent</b> has been obtained for the ‘ <b>Mechanical Pond Applicator</b> ’ (Design No. 210262 dated 21.05.2007)
<b>Recognition and Award</b>	<p><b>Awards</b></p> <p>i) The <b>Best Poster Award</b> at X Agricultural Science Congress during 8-10 February, 2011 at NBFGR, Lucknow for the paper ‘Evaluation of growth performance and compatibility of <i>Labeo fimbriatus</i> with major carps in polyculture system’.</p> <p>ii) The <b>Best Poster Award</b> at X Agricultural Science Congress during 8-10 February, 2011 at NBFGR, Lucknow for the paper Mitochondrial genome sequence of Indian major carp, <i>Labeo rohita</i>.</p> <p>iii) <b>The ICAR Award for Outstanding Interdisciplinary Team Research in Agriculture and Allied Science for the Biennium 2005-2006</b> for outstanding research contribution in Fisheries</p> <p>iv) <b>Bioved Fellowship Award, 2008</b> in the field of Seed Production, Rearing and Grow-out Production of Carps from Bioved Research Society, Allahabad.</p> <p>v) <b>Member Scientist</b> of the ‘Aquaculture Production &amp; Environment Division’, which received the Institute’s ‘<b>Best Division Award, 2006</b>’</p> <p>vi) <b>Norman E. Borlaug Fellow, 2006</b> in the Norman E. Borlaug International Agricultural Science and Technology Fellows Program under the Indo-US Agricultural Knowledge Initiative (AKI)</p> <p>vii) <b>Best Young Scientist Award, 2005</b> of Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar.</p>



	<ul style="list-style-type: none"> <li>viii) <b>‘Best Research Group Award, 2005’</b> of Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar.</li> <li>ix) <b>‘Dr. Karunasagar Award, 2005’</b> for the <b>‘Best Ph.D. Thesis’</b> by the Professional Fisheries Graduate Forum.</li> <li>x) <b>Fellowship Award, 2005</b> of International Society for Environmental Protection (ISEP), Science Academy, Gorakhpur.</li> <li>xi) <b>‘Young Scientist Award, 2004’</b> by International Society for Environmental Protection (ISEP), Science Academy, Gorakhpur.</li> </ul>
	<p><b>Recognition</b></p> <ul style="list-style-type: none"> <li>i) <b>Certificate of Recognition</b> from the Director, CIFA, Bhubaneswar for outstanding contribution to development of CIFA during 2008-09.</li> <li>ii) <b>Certificate of Appreciation</b> for the successful organisation of the ‘Best Fisheries Graduates of India Selection Process’ and the ‘PFGF Awards Presentation Ceremony’ from <b>PFGF, Mumbai in 2007</b>.</li> <li>iii) <b>Member Scientist</b> of the <b>Carp Culture Research Group</b>, received the <b>‘Special Appreciation’</b> for <b>research efforts in 2006</b> from the Director, CIFA, Bhubaneswar.</li> </ul>
<p><b>Membership of Professional Societies</b></p>	<ul style="list-style-type: none"> <li>i. Asian Fisheries Society</li> <li>ii. Association of Aquaculturists, Bhubaneswar, India.</li> <li>iii. Network of Tropical Aquaculture and Fisheries Professionals, Penang, Malaysia.</li> <li>iv. Association of Rice Research Workers, Cuttack, India.</li> <li>v. Professional Fisheries Graduate Forum (PFGF), Mumbai</li> <li>vi. Bioved Research Society, Allahabad</li> <li>vii. International Society for Environmental Protection (ISEP) Science Academy, Gorakhpur</li> </ul>