

CONSERVATION OF CHERUVALLY AND VECHUR CATTLE

KSBB Final Report
(2013-15)



Vechur Conservation Trust

BIODIVERSITY AWARD 2016 BY UNDP, NBA AND MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, GOVERNMENT OF INDIA

To

Prof. Sosamma Iype the Director of Projects of the Vechur Conservation Trust

(Former Director, Centre for Advanced Studies in Animal Genetics and Breeding Kerala Agricultural University)

This was for conserving the Vechur cattle for the last 28 years, work being done in The Kerala Agricultural University and Vechur Conservation Trust.

Financial help for the conservation work was from

Indian Council of Agricultural Research, New Delhi

Ministry of Science and Technology, Government of India

National Biodiversity Authority of India

Kerala State Biodiversity Board

SGP, GEF, CEE, United Nations Development Programme

Food and Agricultural Organisation, Rome

National Bank for Agriculture and Rural Development

Also Support from

Conservationists, Animal lovers and media

1. TITLE OF PROPOSAL : CONSERVATION OF CHERUVALLY AND VECHUR CATTLE

Sanction Order : Proceedings No.516/A1/2013/KSBB dated 26.03.2013

Total Amount : Rs. 13, 67,000/-

2. LOCATION

Institute's Name : Vechur Conservation Trust registered No. 21/1998 dt. 20.02.1998 under Society of Charitable Act in the Office of the Sub Registrar, Mannuthy, Thrissur, Kerala

Place : Mannuthy

District : Thrissur

State : Kerala

Actual Location : Germplasm Centre, Moozhikulangara, Neendoor, Kottayam

3. PRINCIPAL INVESTIGATOR

Name : Sosamma Iype

Designation : Director of Research

4. OBJECTIVES

1. Conservation of Cheruvally and Vechur cattle
2. Strengthening the Germplasm centre of native cattle to enable it to act as the nucleus herd with superior genetic merit.
3. Production and processing of semen of Cheruvally and Vechur bulls for conservation and genetic improvement of the variety.

5. PROGRESS UNDER THE PROJECT

- I. Vechur bulls were used for semen collection the Germplasm centre of the Trust
- II. **Production and Processing of Semen:** Total breeding bulls including Vechur maintained during the period were 8. Apart from this frozen semen from 7 bulls were also used in different localities. Kozhikode, Palakkad, Kottayam were partially covered. Semen is collected three days a week and supplied as per requirement to the farmers' native cows. Now started use of frozen semen with the collaboration of the Kerala Veterinary and Animal Science University.



Fig. 1. - University Bull used as a frozen semen donor



Fig. 2. - One bull in Germplasm centre

Regular semen collections were done from the germplasm bulls and semen supplied to farmers.

No. of inseminations	837
Calving reported	236

The inseminations for cows from nonregistered farmers also are included. More Calves will be born from inseminations done during the last 10 months number being 355. Some from far off places were missing .

- III. Five animals belonging to Cheruvally (one male and four females) purchased and maintained in the germplasm centre. Later on two farmer units started in Munnar and Thiruvananthapuram under the project.
- IV. Vechur Units newly started were more than 100.
- V. Three Breed Associations have been started by the initiation of the Trust. i.e. *Vechur Breeders Association, Kasargod Cattle Breeders Association* and *Wayanad Cattle Breeders Association*.



Fig. 3. - Seminar on Mattupongal and announcement about the starting of Kasargod Cattle Breeders Association



Fig. 4. - Wayanad farmers association



Fig. 5 & 6. - Cheruvally cows with owner



Fig. 7. - KSBB Chairman Dr. Oommen V Oommen with Cheruvally cows



Fig. 8. - KSBB Chairman at the VCT Germplasm centre Neendoor

- VI. A Sample survey on the Cheruvally animals was done.
- Most of the animals observed are with the Cheruvally estate workers
 - Animals are let out in the estate for grazing.
 - Breeding is not controlled.
 - The males with the herd do not appear purebred and this cause dilution of the breed.
- VII. Observations were made on the incidence Foot and Mouth disease during the outbreak of the disease in crossbred animals. No case of Foot and Mouth was seen in Vechur animals. But in the case of Cheruvally in March 14 there are a few cases of disease incidence.
- VIII. **Identification of Animals:** It was done very scientifically .Microchipping started by the Vechur Conservation Trust for the very first time in India in cattle for the application of accurate identification, prevention of fraud and indirectly increasing the value of the animals. Microchipping was started with Vechur then Kasargod and third with Cheruvally cattle in three places Kottayam, Kozhikode and recently in Munnar.

State Seminars and pedigree certificate distribution programmes were conducted in both Kottayam and Kozhikode. Created awareness about microchipping among the farmers and it was valued by breeders and farmers.



Fig. 9. - Inauguration of pedigree certificate distribution of microchipped Native cattle. Hon Minister Sri Thiruvanchoor Radhakrishnan, Environmental Minister, KSBB chairman Professor Oommen V. Oommen on 26th Jan 2015



Fig.10. - Pedigree certificate for a microchipped cow in Kottayam



Fig. 11. - a) Microchipping Kozhikode Seminar b) Dr. Joby George speaking on microchipping in Kozhikode



Fig. 12. - Pedigree certificate for a microchipped calf in Kozhikode



Fig. 13. - New format of Pedigree Certificate of cow belonging to Santosh P. K.

Microchip is a permanent method of electronic identification. Technology in this is passive Radio Frequency Identification (RFID). The chip is very small and is of a grain of rice in length and thinner than a black pepper seed. This is implanted under the skin. The site chosen is upper back of the left ear.



Fig. 14. - Microchip with a pepper seed



Fig. 15. - Chip Applicator



Fig. 16. - Chip implantation for the calf.



Fig. 17. - Reading after implantation

A Microchip Applicator is used for implantation. A veterinarian or any trained person can do the implantation in a few minutes, but it lasts a lifetime. As this microchip is not visible from outside and requires an electronic reader, a numbered plastic ear tag of high quality is put on the right year. These two are entered in the record of the individual. The electronic reader is used during visits from the Trust. A certificate is given for each animal identified with microchip. Pedigree certificate is given for Vechur and Kasargod cows with pedigree details.

Microchip implantation helps in accurate selection of Animals for Breeding, Pure breeding & Conservation, Avoiding inbreeding i.e. mating between Relatives, prevent fraud practices in sale, tracing lost animals.

- IX. **Organic Farming:** Farmers have changed over to organic farming. A real integration of agriculture and animal husbandry has happened. Zero budget/Natural farming has been gaining more and more popularity among farmers, this was due to the positive results in yield of organic products are fetching a higher price in the market. The native cattle reared by the farmers are fed mostly green grass and straw, concentrate supplementation is meager. The milk is sold at double price of the crossbred cow milk, Vechur and Kasargod ghee costs 3 times the cost of crossbred cow ghee. Same is the case with native cattle cow dung.



Fig. 18. - Unnigopalan K. P. in his field



Fig. 19. - Banana Cultivation



Fig. 20. - Ginger cultivation in grow bags on terrace

X. Value Added Products:

Trainings were given by the Trust for the production and marketing of value added products to make conservation programme profitable and sustainable. Vechur ghee, GOMU, Bhoosanjeevani, Gomayabhasmam, Jeevamrutham were the main products prepared.



Fig. 21. - Vechur Ghee



Fig. 22. - GOMU



Fig. 23. - Bhoosanjeevani



Fig. 24. - Pulverised Cow Dung



Fig. 25. - Cow urine distillation method



Fig. 26. - Jeevamrutha preparation by farmers

Exhibitions:

- a) Cheruvally cow exhibition was organized in National Conference on Native Livestock Breeds for the Future of Mankind at Kottayam
- b) Vechur Conservation Trust participated in the Biodiversity Exhibition by Kerala State Biodiversity Board at Thiruvananthapuram.



Fig. 27. - Sri Oommen Chandy, Hon. Chief Minister of Kerala Visiting Vechur Conservation Trust's stall (2015)

- c) Biodiversity Exhibition organized by Kerala State Biodiversity Board at Kottayam. Vechur Conservation Trust participated.



Fig. 28. - Students Visiting Vechur Conservation Trust's stall at Kottayam (2016)

XI. Promoting Conservation in Educational Institutions

1. Initiated a native cattle unit in CMS college, Kottayam



Fig. 29. - Meeting at CMS College, Kottayam

2. Started a Vechur cow unit in Excel Public School, Kunnamkulam, Thrissur.



Fig. 30. - Interaction with school children

എക്കൽ സ്കൂളിൽ പശുവളർത്തൽ തുടങ്ങി

കുറമ്പകുളം പ്രകൃതിമന്ദിരം ചിന്താനന്ദം പുരസ്കാരത്തിന് തിരഞ്ഞെടുക്കപ്പെട്ടിട്ടുള്ളതായി ഏകദേശം പന്ത്രണ്ട് നൂറ്റാണ്ടിന് പശുവളർത്തൽ പദ്ധതി ആരംഭിച്ചു.

നവം നൂറ്റാണ്ടിലെ വെള്ളി പട്ടണത്തിൽ പരിപാടിയെടുത്ത്, പുരസ്കാരം ലഭിക്കുകയും ചെയ്തു. ഇതിൽ പശുവളർത്തൽ പദ്ധതിയെക്കുറിച്ച് പ്രതിബദ്ധിച്ച്, നൂറ്റാണ്ടിലെ ഇതര പദ്ധതികളിൽ നിന്നും തിരഞ്ഞെടുക്കപ്പെട്ടതായി നോക്കുക.

പശുവളർത്തൽ പദ്ധതിയെക്കുറിച്ച് പരിപാടിയെടുക്കുകയും ചെയ്തു. ഇതിൽ പശുവളർത്തൽ പദ്ധതിയെക്കുറിച്ച് പ്രതിബദ്ധിച്ച്, നൂറ്റാണ്ടിലെ ഇതര പദ്ധതികളിൽ നിന്നും തിരഞ്ഞെടുക്കപ്പെട്ടതായി നോക്കുക.

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പശുവളർത്തൽ പദ്ധതിയെക്കുറിച്ച് പരിപാടിയെടുക്കുകയും ചെയ്തു.

ഇത് പശുവളർത്തൽ പദ്ധതിയെക്കുറിച്ച് പരിപാടിയെടുക്കുകയും ചെയ്തു. ഇതിൽ പശുവളർത്തൽ പദ്ധതിയെക്കുറിച്ച് പ്രതിബദ്ധിച്ച്, നൂറ്റാണ്ടിലെ ഇതര പദ്ധതികളിൽ നിന്നും തിരഞ്ഞെടുക്കപ്പെട്ടതായി നോക്കുക.

XII. Conclusion:

1. Conservation of native animals is inevitable. The animals from hot or hot humid conditions as in Kerala and other places are an insurance for the future. In outbreaks of diseases like Foot and Mouth Vechur breed has shown high resistance in consecutive years compared to the crossbred cattle of Kerala, resulting in a portion of the farmers maintaining this breed in place of larger breeds.
2. The demand for Vechur cow is very high and this emphasizes the need for conservation programme to continue. Making available a small sustainable cow which does not need sophisticated management but would give milk sufficient for home consumption is a great service/outcome of the project.
3. Conservation includes proper breeding. Animal identification is absolutely essential for breeding and also management. Proper identity with permanent method would reduce fraud practices. Microchip implantation helps in accurate selection of animals for breeding. It helps pure breeding & conservation, avoiding inbreeding, it is useful to prevent fraud practices in sale, tracing lost animals. The pilot work done on micro chipping should continue expanding vertically and horizontally.
4. Conservation can be done in-situ only by farmers One important lesson learnt from this project is that incentive to the farmers by way of giving money is not effective as envisaged at the inception of the project. It does not reach the goal. Giving a onetime grant of a lump sum amount for owning a native cow as is done by the government now does not appear to be an advisable policy.
5. Looking at farmers' needs and supporting them in ways like promoting markets for the products, insurance for the animals, animal identification for accurate selection as well as avoiding fraud practices in sale were found inevitable. Incentives in the form of technology, awareness and marketing support are effective and hence recommended.
6. The selection, breeding and conservation work has to continue as otherwise the purebred Vechur will deteriorate and the population would revert to the point of start.
7. Integration with organic farming is required for the sustainability of conservation.
8. Starting education on conservation at school and College level is equally or more effective in creating awareness and initiating action related to conservation.

XIII. Expenditure:

KSBB Cheruvally Project Expenditure Statement (1.4.2013 to 30.9.2016)							
	2013-14		2014-15		2015 - 30.9.16		GT
Fund Released	429000		469000	-460	375200	-2794	1273200
Items	Budget	Expdt.	Budget	Expdt.	Budget	Expdt.	
Technician Wages	85000	80000	70000	67355	130000	130400	277755
Contract Labour	75000	79100	38000	47670	100000	92150	218920
feed	90000	91460	200000	198044	175000	186385	475889
Contingency	66500	66552	45000	43046	40000	38133	147731
TA	22500	22348	40000	39535	10000	5645	67528
Nucleus Herd	40000	40000	0	0	0	0	40000
Chemicals/Drugs	0	0	8000	7684	14000	13494	21178
Admn. Charges	0	0	18000	18000	0	0	18000
Overhead Charges	0	0	50000	50000	0	0	50000
GT	429000	429460	469000	471334	469000	466207	1367001
Excess Spent		-460		-2794		2793	

Expt. Incurred	1367000
Fund released	1273200
balance to be released	93800

Video links

1. WE Salute (Real Heroes) Sosamma Iype in TV New on Nov.7th 2015
<https://www.youtube.com/watch?v=05odPWTJ2dE>
2. Krishi Darshan 29 August Doordarshan DD for Malayalam Interview with Dr. Sosamma on Native Cattle <https://www.youtube.com/watch?v=H66NqD6OV7Q>
3. The Black Beauties of Attappady <https://www.youtube.com/watch?v=brhcB5mvoew>
4. Saga of Vechur
<https://www.youtube.com/watch?v=fDQ-ZdWX9hw>
5. Video Saving The World's Smallest Cow From Extinction in AP television on July 30th 2015
<https://www.youtube.com/watch?v=oIrQHRNIUJA>

Web link

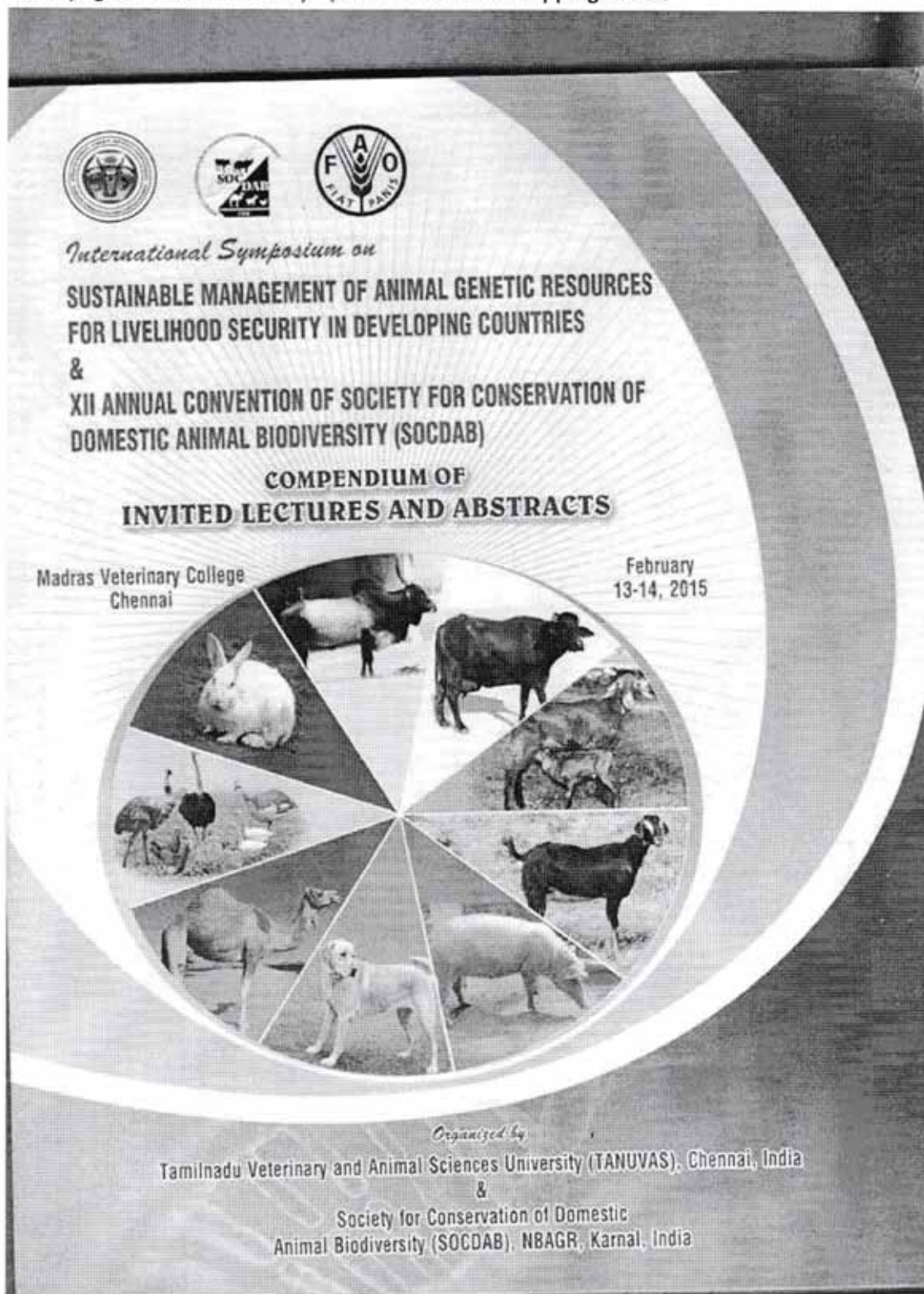
1. <http://www.vechur.org/pdf/vechur%20conference%20proceedings.pdf>
2. <http://www.newindianexpress.com/states/kerala/>
 - a. [vechur-cow-to-be-micro-chipped-today/2015/01/26/article2636928.ece](http://www.newindianexpress.com/states/kerala/vechur-cow-to-be-micro-chipped-today/2015/01/26/article2636928.ece)
3. <http://ecofoods.blogspot.in/2008/02/vechur-miniature-cattle-breed-of.html>
4. <http://www.zoosprint.org/zoosprintmagazine/2011/june/6-7.pdf>
5. <http://www.realmilk.com/how-to/meet-the-tiniest-dairy-cow-in-the-world-vechur-cattle/>
6. <http://meerasanval.wordpress.com/2012/01/11/holy-cows-and-wild-silk/>
7. <http://www.thehindubusinessline.com/industry-and-economy/agri-biz/govt-launches-500-crore-project-to-protect-indigenous-cows/article6258522.ece>
8. [http://www.answers.com/Q/What is the breed with the smallest breed of dairy cattle](http://www.answers.com/Q/What_is_the_breed_with_the_smallest_breed_of_dairy_cattle)
9. <http://www.thefreelibrary.com/Meet+the+world's+tiniest+dairy+cow%3A+Vechur+cattle.-a0287390645>
10. <http://www.scoop.international.com/local-health-traditions/p/4023865074/2014/07/01/meet-the-tiniest-dairy-cow-in-the-world-vechur-cattle-a>
11. http://www.khaleejtimes.com/displayarticle.asp?xfile=data/international/2012/March/international_March30.xml§ion=international
12. <http://v4news.com/punjab-chief-minister-gets-attracted-towards-the-kasargod-species-of-animals/>
13. <http://www.successeds.net/currentaffairs/vechur-cow-milk-12085.html>
14. <http://www.indiavideo.org/kerala/pets/vechur-cow-cattle-breed-8844.php>

15. <http://devinder-sharma.blogspot.in/2013/11/worlds-second-smallest-cattle-breed.html>
16. <http://www.face2news.com/news/8876-badal-for-a-comprehensive-plan-for-the-conservation-of-sahiwal-cattle.aspx>
17. <https://www.youtube.com/watch?v=fDQ-ZdWX9hw>
18. www.fao.org/docrep/016/i3018e/i3018e00.pdf The invisible guardians
19. <http://tehelka.com/the-desi-cow-almost-extinct/?singlepage=1>
20. http://journals.cambridge.org/repo_A89VxRM9 Animal Genetic Resources / Resources génétiques animales / Recursos genéticos animales, volume 52, pp. 105-110.
21. Guinness Book of World Records. The world's smallest cattle is a rare breed of an Indian zebu called the Vechur cow.
22. Radio Programme was conducted in November 2016

Quoted in Wikipedia

1. "Smallest cow (Height)". Guinness World Records. Retrieved January 6, 2012.
2. Krishnakumar, R. (9 April 1999). "A cow and controversy", *Frontline*.
3. Animal genetics Resource Bulletin 1997 (FAO)
4. Proceedings of the National Conference on Native Livestock Breeds and their Sustainable Use 2010.
5. Prabu, M. J. (2005-12-01). "Vechur cattle: ideal for household rearing". The Hindu. Retrieved January 6, 2012.
6. Sainath, P. (January 5, 2012). "Holy cow! Small is beautiful". *The Hindu*.
7. Thirpathy and Iype 1997 www.vechur.org
8. "Beta casein A1 and A2 in milk and human health", Report to New Zealand Food Safety Authority, <http://www.nzfsa.govt.nz/policy-law/projects/a1-a2-milk/a1-a2-report.pdf>
9. Nair, Madhavan (2010-07-31). "Milk of the indigenous Vechur cow beneficial to health". The Hindu. Retrieved January 6, 2012.
10. Jose, D. (12 August 1999). "Mystery shrouds Vechoor cow patent issue", *Rediff.com*.
11. Hall, Stephen J. G. (2008). *Livestock Biodiversity*. Blackwell Publishing. p. 178. ISBN 0-632-05499-9.

Cover page of International Symposium and Microchipping Article



3. SIGNIFICANCE OF MICROCHIPPING IN CONSERVATION OF VECHUR CATTLE

Sosamma Iype

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Introduction

Saving of Vechur cattle from the brink of extinction was an almost impossible task. This could be achieved under the leadership of the author with the cooperation of some environmentally conscious students and farmers. Financial help was received from Indian Council of agricultural research since the second year and all other support was from Kerala Agricultural University. The historic beginning of the project was in 1989 as a Kerala Agricultural University project in the College of Veterinary and Animal sciences, Mannuthy. The details are given in reference 1 and 2.

Government were promoting crossbreeding and only cross breeding. The native bulls were getting castrated as a part of the Government Livestock improvement policy Act 1961. Hundred percent transformation to crossbreds was aimed at. But grading up with exotic bulls was happening. All the native cattle were to be wiped off. Conservation of Native cattle was totally against Government policy in Kerala. This was different in other States. Kerala cattle were ND cattle- Non descript- and bulls were scrub bulls Farmers were moving along with the current as they were looking for high producing animals and the advantage of heterosis was there. But as generations passed ,the milk production was below the expected level and diseases were emerging. The periodical foot and mouth outbreak in Kerala inspite of the vaccinations was resulting in setbacks to dairying. The efforts were to industrialise dairying. Integration of Agriculture and Animal husbandry was falling apart. During the green revolution, the short paddy varieties introduced, reduced the roughage to the animals. Agriculture started deviating from using organic manure to chemicals and pesticides. In 80s this trend reached the peak.

It was at this juncture the conservation project started. This was much earlier to the Earth summit which advocated Biodiversity Conservation. Mainly four arguments or beliefs were put forward (Ref.3) (leaflet prepared and circulated in Malayalam in 1989) to convince the public and to join the cause. The arguments for conservation of Vechur cattle were to:

1. Conserve Biodiversity of the nature
2. Preserve the heritage based on Kerala's history and geography
3. Keep the raw material for research in the present and also in future when more modern equipments and technologies would be available
4. As an insurance for the future in the advancing climate change and new emerging diseases.
5. For a small farmer who cannot afford the sophisticated management required by the crossbred cow and at the same time needs milk just for home consumption and not for sale

Now looking back it is felt that the objectives were very apt and feasible..Probably the results came truer and more need based than expected 26 years back.

The conservation project underwent different stages as planned in the beginning. First was just a multiplication increase the number .this was for the first 10 years. There were calves not phenotypically Vechur. A few had spots here and there as of Holsteins. They were mostly from the cows collected from field and which came to the centre pregnant. The bull details were not known, but most probably they were from crossbred semen. Such calves were sold away. This culling resulted in a good selection and from the next generation calves selection of bulls for breeding could be more rigorous.

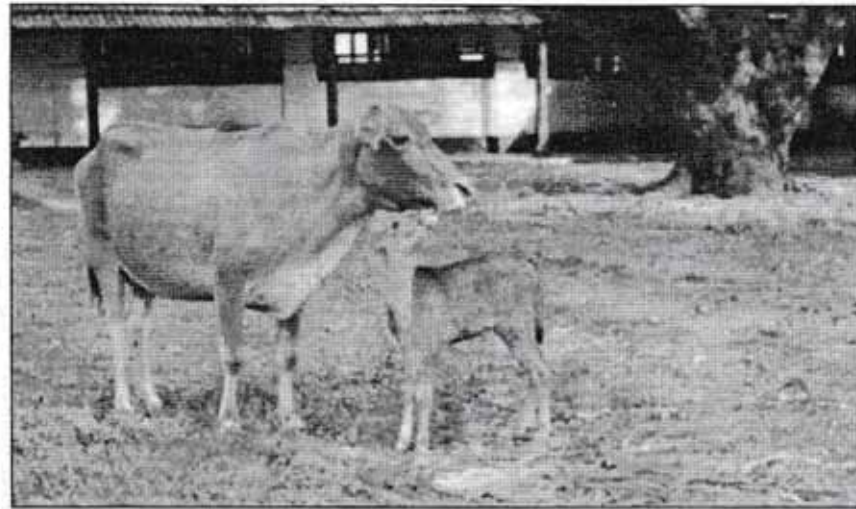


Figure 1

Once the animals were given to farmers the problem was pure breeding. Bulls/Semen were not available in far off places. Many travelled long distances to get semen from the University. Semen was not available anywhere else. Many cows got crossbred. The purification process started reversing in some cases. So the Vechur Conservation Trust started a germplasm centre in the home tract and chilled semen supply started from there.

As time passed, farmers realised more and more, the importance of Vechur and other native cattle. Demand for Vechur was there from the beginning from farmers. As the news of conservation reached far and wide the demand from other States also increased. In 2002 The University sold 2 cows and a bull to Madhya Pradesh (Deendara Upadhyaya Institute) and it is understood they multiply there and the number has increased. Many people from other States bought cows from farmers of Kerala at exorbitant rates.

At this juncture Kerala Government became interested in conservation of native cattle. The Government was concentrating on Gir and other breeds of cattle in their farms and supplying semen from these breeds. But then the problem was that Government's effort was directed to conserve native animals of other states. The zero budget farming propagation gave a boost to using native cattle. The farmers also got the impression that the dung and urine for zero budget farming could be from any Indian cow. But along with the Governmental efforts on other native cattle, this also gave an impression that any Indian breed is a native breed. Actually Native cattle in Kerala means traditional varieties of Kerala. The performance of cattle from other states was not good as expected. The climate and feed availability for the larger animals from other States were not congenial to them in Kerala. So the smaller animals received more attention and demand was higher. The Government realised the importance of Vechur cattle and other native cattle and included native cattle conservation in the policy in line with the national policy.

Once it was thought that the major problems in conservation are over the second phase started.

Pure breeding is the key to conservation

The medicinal value and certain other qualities proved or attributed started making a hype for Vechur. The market value went up. This led to extensive sales of cows majority from unreliable sources. Other small cows from Kerala and neighbouring Karnataka were sold as Vechur. Fraud practices in sale might look just unethical. The deeper, the whole conservation programme could get upside-down.

Cows with the farmers are genuine in some cases and not so in many cases. These are to be differentiated. The pedigree shown below is of one of the three cows of a farmer. In many other cases the pedigree is not traceable. This pedigree could be traced from records. This was the descendant of a Vechur cow and bull sold to Malanad society from the University by the end of 90s. The sale details were available and monitoring could be done. But in most of the cases this is difficult. The dam may be known, but not the bull details. Some farmers are not keen to obtain the bull details and keep the records. Some agencies supplying the semen or bull are also not giving the details or they do not have it. But the semen supplied from the University as well as the Vechur Conservation Trust records the donor bull and is shown in the cash receipt and hence the pedigree is traceable. This cash receipt from the Trust is carefully kept by the farmer as the trust charges the farmer for pregnancy and not for dose of semen. Some farmers keep all records accurately. The Trust uses the bulls from the University or their descendants. So pedigree from bull side is traceable from the foundation stock and such bulls are selected.

The University though supplies bulls or semen with details there is no mechanism to follow up. The limitation of the Trust is man power and funding. The Trust is able to trace the animals in limited area. But the Vechur cows though few in number are spread out in all the districts of Kerala and other States. The cows taken far off places in most of the cases are not bred true also.

Probably conservation has reached a stage where more careful strategies are to be implemented. Milk recording started as early as 1900 in Europe. This was the basis of selection. Individuals are evaluated in any improvement process. Bull evaluation for sex limited traits are done based on indirect ways though not on its own performance. It is known that 95% improvement comes from bull side.

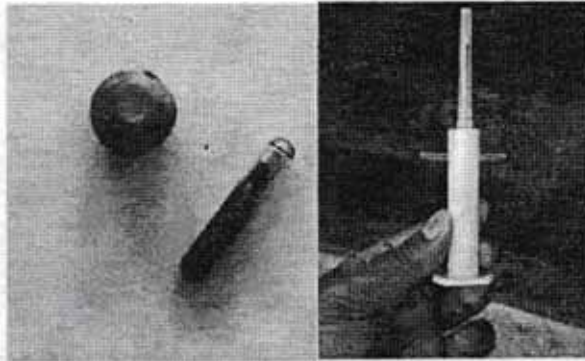
How can a bull be selected if its ancestors from maternal and paternal side are not known? How can we make selections if individual performance is not known? The very initial step is to identify the animals all males and females of the population. Identification of animals.

Animals in the Conservation unit of the University were carefully identified and recorded since beginning. Ear tags were used for identification. All calves born were tagged. So naturally animals sold also had the tags. Whenever tags were lost the animals were renumbered in the farm. This was difficult for the farmers' animals. Only animals with tags from other sources as in insurance and not belonging to Vechur breed are sold as Vechur. And certificates are also available to catalyse this kind of sale, the complication starts here.

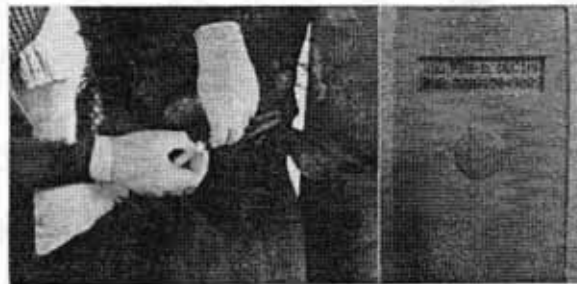
At this juncture the Vechur Conservation trust has started a project for permanent identification of Vechur and other native animals of Kerala. Agencies like NABARD and Kerala state Biodiversity Board and GEF are now collaborating with the Trust in conservation and community partnership. Steps are now taken to identify and register farmers' cows. Two breed associations have been started. One is for Vechur and the other for Kasargod under the guidance of the Trust.

Recently the Trust started microchipping. Microchips, Applicators and Electronic reader were purchased with funding from NABARD project. There was some small fund earmarked as incentive to the farmers. It was at the rate of Rs. 500 per animal which could be given in cash or kind to the farmer. There could not be a better incentive than identifying the genuine animal in a permanent way. Microchipping is planned for Vechur and other native cows under the project.

Microchip is a permanent method of electronic identification. Technology in this is passive Radio Frequency Identification (RFID). The chip is very small and is of a grain of rice in length and thinner than a black pepper seed. It is implanted under the skin. The site chosen in this project is upper back of the ear.



Microchip with a pepper seed



Chip implantation

A Microchip Applicator is used for implantation. A veterinarian or any trained person can do the implant in a few minutes, but it lasts a lifetime. As this microchip is not visible from outside and requires an electronic reader, a numbered plastic ear tag is put on the ear. These two are entered in the record of the individual. An electronic reader is used during visits from the Trust. A pedigree chart is planned for each animal identified with a microchip. The Trust is giving different grades to the animals depending on the details of pedigree. A cow with pedigree is shown in fig.6 is given grade A.

RFID Ear Tags are used in many countries for identification of individuals and improving management techniques. They are Ear tags with RFID microchips.

Uses of microchip

Microchip implantation helps in Accurate selection of Animals for Breeding, Pure breeding & Conservation, Avoiding inbreeding i.e. mating between Relatives, Prevent Fraud Practices in Sale, Tracing lost animals.

Microchips are generally used by kennels in India and other places. They are found useful in registries, shelters, humane societies, clinics, farms and stables, animal clubs and associations, researchers, and pet store identification.

Conclusion

Conservation of native animals is inevitable. The animals from hot or hot humid conditions as in Kerala and other places would be an insurance for the future. In the eventuality of global warming the animals adapted to cold climate may not thrive and the tropical animals would be needed. Conservation includes proper breed

Animal identification is absolutely essential for breeding and also management. Proper identity with permanent method would reduce fraud practices.

Reference

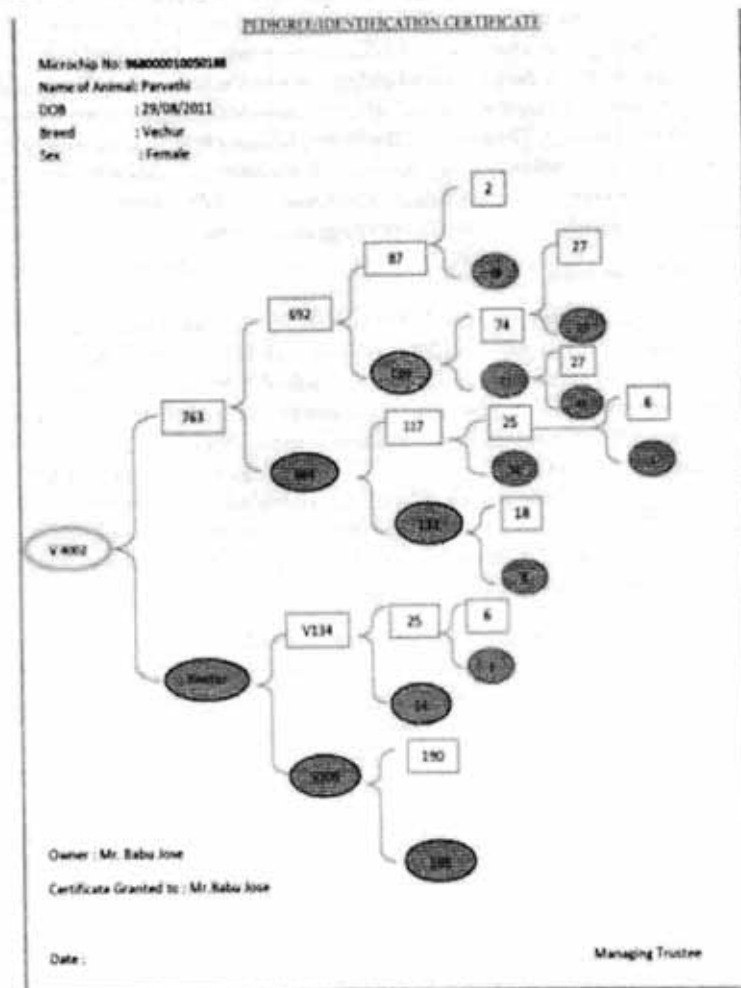
Sammalpalle 2013 Animal Genetic Resources, 2013, 52, 105-110. © Food and Agriculture Organization of the United Nations, 2013 www.vechur.org

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Acknowledgements

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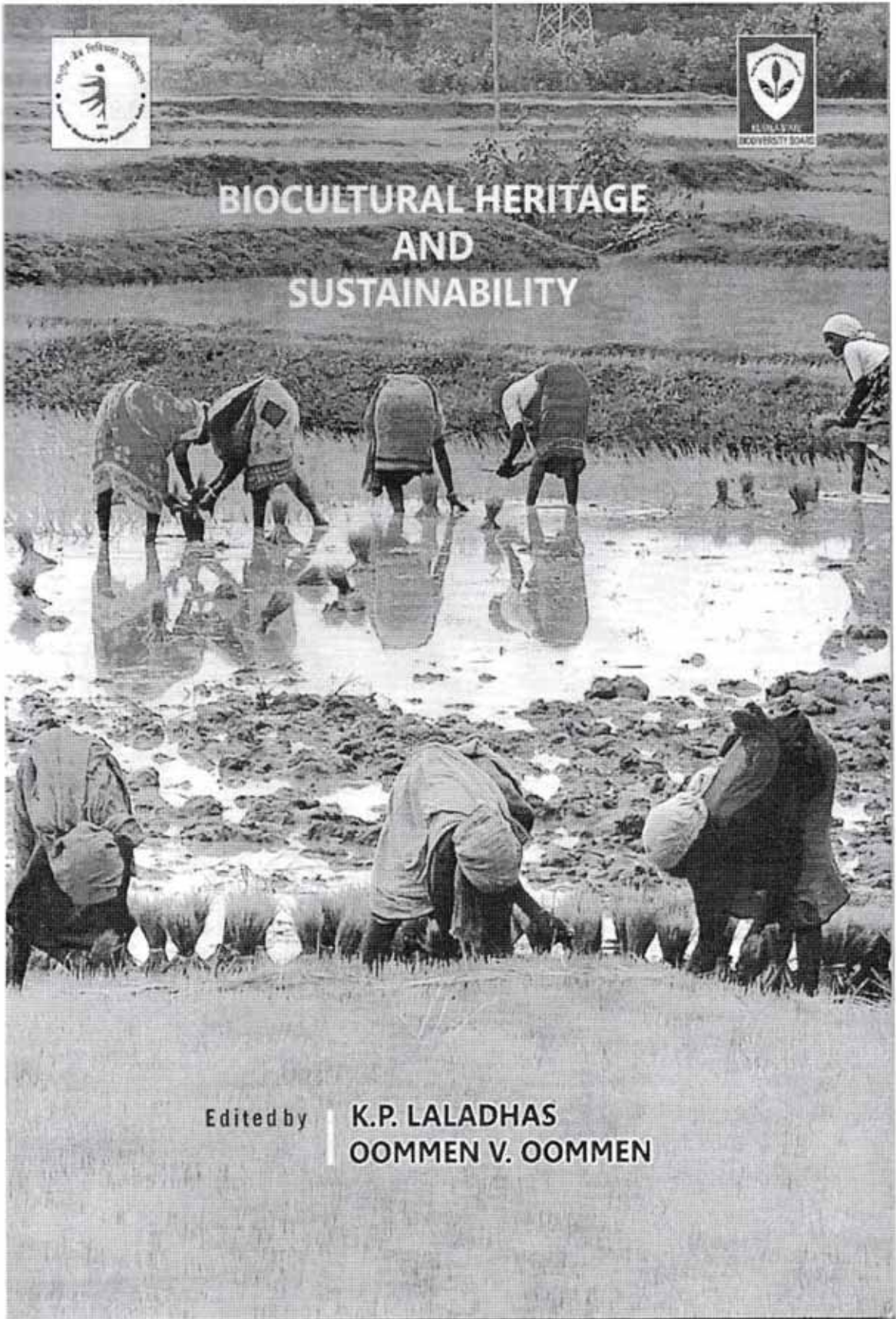


Pedigree Certificate of cow belonging to Babu Joseph Pala

Cover page of Biological Heritage and Sustainability & Article



BIOCULTURAL HERITAGE AND SUSTAINABILITY



Edited by | **K.P. LALADHAS**
OOMMEN V. OOMMEN

CAN WE AFFORD TO NEGLECT THE TRADITIONAL BREEDS?

Sosamma Iype

Awareness on the need of conserving biodiversity is increasing worldwide. At the same time the commercial developmental efforts aggravates the loss of biodiversity. Biodiversity on this earth is immense and amazing, whether it is in plants, animals or other living forms. It is there in air, water and land. Oceans, seas, rivers, or wherever water is present, biodiversity is there. Mountains, valleys, plains -any form of land carry biodiversity. The earth has 10 million different species. Birds and mammals make up less than 0.5 per cent of the 10 million different species. There are only 40 different species of domestic livestock according to FAO estimates. In these species there are more than 8 000 domestic breeds. They are spread in different parts of the world and have adapted to the locality and requirements of the community. Breeds evolved over millions of years through the processes of natural selection and as well as artificial selection by man. Random sampling process also has influenced breed formation. Domestic animal diversity denotes the genetic differences within and between all breeds and species utilised in agriculture.

Animal Genetic Resources

The breeds of livestock and the species, to which they belong, along with the 80+ species of wild relatives, comprise the world's animal genetic resources for food production. It is said that 75 per cent of the world's food is generated from only 12 plants and five animal species. The Global Databank for Farm Animal Genetic Resources currently includes information on 6379 breed belonging to thirty mammalian and avian species. In World Watch list (WWL-DAD:3) those breeds considered to have become extinct are also listed. As on June 2014 number of domestic breeds reported to FAO is 8,800. 17% are at risk of extinction, while 7% are already extinct.

Domestication

Domestication of animals was for the benefits of humans either for food or companionship or some other use. It is believed that animals were first domesticated tens of thousands of years back. Dog was the first domesticated animal and said to be domesticated before 33000 BC while cats became pets around 7000 B.C. Sheep was the first animal domesticated for food.(in the Middle East around 11,000 – 8500 BC) Goats followed soon after. They were reared by the nomadic pastoralists. The Pastoralists constantly moved in seasons with their flocks for fresh grass.

The pig probably was first domesticated in China.9000BC Buffaloes are inscribed in the seals of the Indus civilization. Both horse and the ass were there in the two of the earliest civilizations of Mesopotamia and Egypt. Elephants were tamed around 2000 BC. in India and African elephants in regions north and south of the Sahara.

Cattle and pigs were associated more with settled communities. Period of first domestication was believed to be around 7000BC.

Now, DNA studies on 134 breeds of cattle from different parts of the world by a team of University of Missouri researchers have thrown more light on the domestication of cattle and first place of domestication The African cattle breeds are genetically similar to those of cattle first domesticated in the Middle East(presently Iraq, Jordan, Syria and Israel)early 10,000 years ago, proving that those cattle were brought to Africa when farmers migrated south. It was believed that African cattle were native to that area and domesticated 10,000 years ago.

Traditional breeds and Livelihood

Traditional livestock breeds or Heritage breeds are that were raised by farmers in the past.They are locally adapted. Mostly they are of the rural poor and small farmers and contributing to livelihood.Breeds that are not locally adapted are described as "exotic". They are new arrivals to the area from other places or zones. The State of the Animal Genetic Resources for Food and Agriculture, compiled from 169 country reports,70% biodiversity is in developing countries and from traditional breeds. Livestock contributes to the livelihoods of 1.96 billion people worldwide, (S Anderson - 2003)and approximately 70 percent of the world's rural poor depend on livestock as an important component of their livelihoods. 90 percent livestock related job is done by women. Livestock currently accounts for about 30 percent of agricultural gross domestic product in developing countries, Livestock is a part of the ecosystem. Their most important contribution is food in different forms.They enrich the soil with manure and keeps it productive. In rural areas animal manure is used as fuel. Animal products are also used for clothing and leather materials. Animal produces are also used as medicines or as a component

of medicine. Animals and products have great cultural significance in some communities and localities. Draught power from livestock is important in rural areas. Continuous employment is another positive aspect of livestock rearing. In many areas animals are a cash reserve. The diversity of the traditional breeds increases sustainability as against monoculture

Commercial breeds

Commercial breeds are used in the industry. Commercial farmers rely on breeds that produce maximum meat, milk. These economically productive breeds are used all over the world. They replace the indigenous animals which is a great blow to biodiversity.

The international pig and chicken industries as well as dairy industry depend just on a handful of varieties and five main breeds comprise almost all of the dairy herds in the US. 60 percent of beef cattle are from 3 breeds. 75 percent of pigs in the US come from only 3 main breeds. Over 60 percent of sheep come from four breeds, This trend is there in other countries too. The trend in the tropical areas also is to adopt this policy. As a result, hundreds of different types of livestock are in danger.

Another consequence of industrialisation is that it is restricted to a few Corporates. More than 95% Germplasm was provided by just four turkey breeding companies, FAO concludes there are chances for more spread of disease due to intensive systems and long distance trading of livestock. Newly introduced diseases could be detrimental to the existing traditional breeds. Genetic modifications in animals for specific purposes are made from a narrow genetic base genetic leading to diversity loss.

In the industry high producing livestock are used in other countries also as in US

But different kinds of animals would be required for different production systems and different environments. So quite different genetic resources would be required for sustained production of food and agriculture. Requirements of the different economic classes are not the same. Commercial breeds are under intensive and mostly in high input systems. But the majority of the livestock keepers utilize low to medium input production systems. In such ecosystems high producing livestock may not be sustainable. Here selection and management of the local varieties would result in more sustainable outcomes.

Traditional/ Indigenous breeds have evolved to survive and reproduce in their local environments. The adaptive traits like resistance to various diseases, ability to utilize poor quality feed and limited water supply, heat and humidity tolerance make the local varieties economic and sustainable in the specific locations.



Globalization of the food system and marketing also have resulted in the change in the perception of farmers and consumers leading to the usage of fewer breeds and thus decline in animal diversity.

Climate change especially global warming has affected many ecosystems and resultant extinction of some breeds and migration of some breeds from the original ecosystem.

Conservation of domestic animal diversity

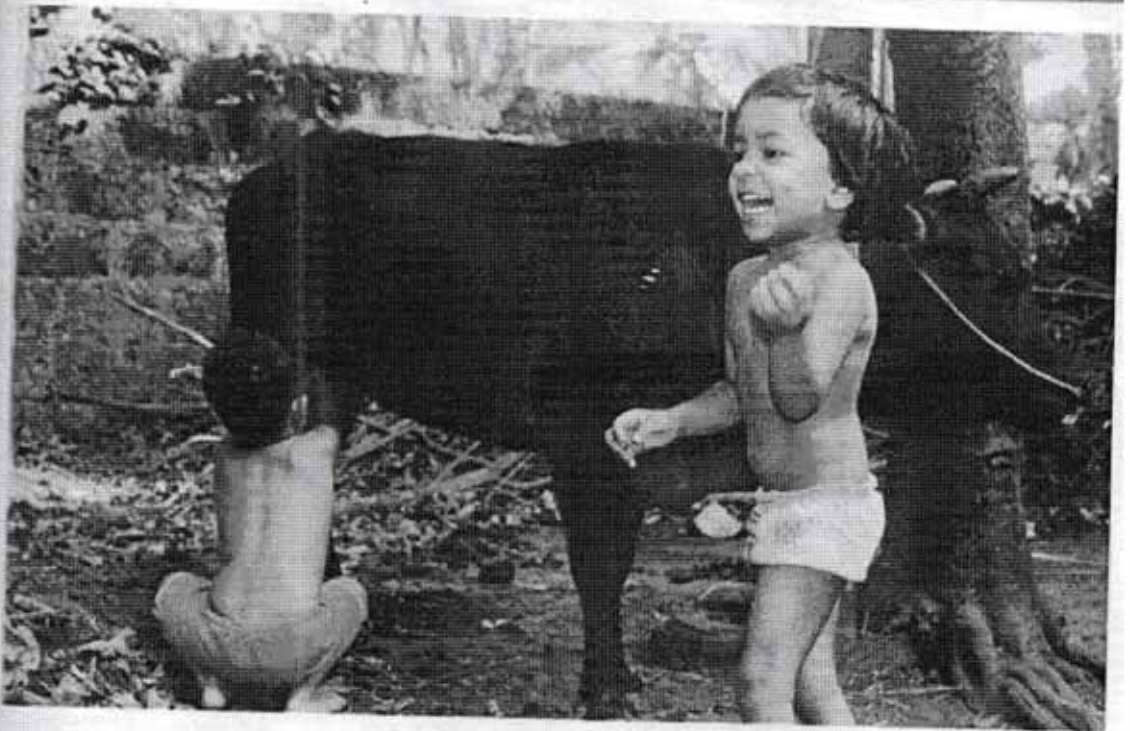
Conservation is defined as "the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations". Domestic animal diversity cannot be replaced. Once lost it is lost for ever. Locally diverse food production systems are under threat and, with them, the accompanying local knowledge, culture and skills of the food producers.

There are many motives for conservation. They are mainly to meet the future needs in the changing world, to preserve the valuable genetic resource and thereby sustain biodiversity, as an insurance against the adverse changes in production environments including climate such as global warming and consequent abiotic stresses, and the possible break down of genetic resistance to disease in future. Conservation of different breeds is required to provide stability within a production environment. If more than one breed or species is kept, failure of one will not completely paralyse the production system.

Saving the livestock would enable studies that would throw light on the evolution as well as relationship between breeds and species and migrations. Another use would be to select livestock for enhanced production needed for future and to meet the future demand of food with the range and quality sought by communities.

Convention of Biological Diversity is the result of global awareness about the need of conservation and in turn it spreads the message of conservation and recommends strategies for this target.

Its Strategic goal is to improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. Main Aichi Biodiversity Target is, "the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained." Strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity. All the signatories of CBD are expected to work towards this. For this it is necessary that bureaucrats, politicians, scientists and farmers are to be aware that the indigenous breeds are capable of contributing to increased agricultural production. This has been proved in India. Sossamalye has also reported early maturity and good intercalving period in native breeds of



Status of biodiversity in India

India ranks first in buffaloes, second in cattle and goats, third in sheep, fourth in ducks, fifth in chicken and sixth in camels in the world, populationwise. The total livestock population consisting of Cattle, Buffalo, Sheep, Goat, pig, Horses & Ponies, Mules, Donkeys, Camels, Mithun and Yak in the country is 512.05 million numbers in 2012. India is immensely rich in animal biodiversity. There are 39 cattle, 13 buffalo, sheep, 24 goat, 6 horses and pony, 9 camel and 16 poultry, 3 pig and one donkey breeds. The biodiversity is much more than seen from these figures. In cattle only about 20% belong to recognised breeds and the rest categorised as non-descript. There is an increase in the recognised number of breeds and this is due to evaluation and characterisation of local populations and development of breed descriptors.

The exotic/crossbred milch cattle increased from 14.4 million to 19.42 million, from 2007-2012 giving rise to an increase of 34.78% whereas the indigenous milch cattle increased marginally from 48.04 million to 48.12 million, an increase of 0.17%. The milch buffaloes (Native to India) increased from 48.64 million to 51.05 million with an increase of 4.95% over previous census. With the introduction and promotion of exotic breeds there is a reduction in genetic variability and population size of local breeds. The world renowned Sahiwal, Red Sindhi and other breeds have drastically reduced. The large scale crossbreeding of Sahiwal with Brown Swiss and Holstein Friesian has been a failure whereas the Sahiwal, Gir and other breeds are doing well in other countries like Brazil and they are able to sell Germplasm of high merit. In

India 50 per cent of the indigenous goat, 30 per cent of sheep, 20 per cent of cattle and almost all poultry breeds are threatened. Policies of the government are disadvantageous to the Native breed keepers as subsidies on feed, artificial insemination and other inputs are in favour of exotic breeds. Import of exotic breeds and neglect of local varieties lead to extinction of local breeds. Native breeds are more important in their contribution to biodiversity and the livelihoods of the poor. Recently the NGOs and also Government are giving attention to Native breeds and it is a good sign. India being a Signatory of Convention of Biological Diversity this is obligatory also.

Conservation of Traditional animals in Kerala

The Vechur cattle were almost extinct due to the massive crossbreeding with exotic bulls implemented by the Government in order to enhance milk production. The conservation of this breed was undertaken in Kerala in the year as early as 1989 in Kerala Agricultural University by Sosammalye of the Animal Breeding and Genetics department. Conservation of a critical breed was being undertaken for the first time in the whole of India. This was initiated with the help of a team of students under the leadership of Anil Zacharia. Thirupathy Venketachalopathy was another associate who worked on characterisation which helped to get recognition for the breed. Kerala never had a recognized cattle breed of its own. Kerala cattle were referred to as "nondescript" or "ND", however there was mention of a variety of very small sized cattle called "Vechur". The description of the animal and the history of restoration and conservation are



Attapadi Blade Goat

detailed in the FAO journal on Animal Genetics Resources under the title Vechur cattle " From the Brink of Extinction to Sustainability" . (Sosamma Iype 2013)

The adaptability to the hot humid environment and low feed requirement are some of the good qualities of the cows. However the farmers' preference to the cow had been due to their relatively higher milk yield. The daily milk yield is 2-3 kg per day. The milk of Vechur cows was considered having high medicinal value and was extensively used in the Ayurvedic system of medicine. Research has shown that the milk fat globule size is smaller (3.21 μ) compared to crossbred cattle of Kerala and buffalo. Presence of A2beta casein in milk is considered highly advantageous over the milk of exotic cows. Higher Arginine content have been proven scientifically. The total population size in Kerala is estimated to be 2000.

The trend of farmers turning to organic farming and the belief that dung and urine of Vechur cow is more soil enriching is an added attraction for farmers. These have brought in a close tie between native cattle rearing and natural farming.

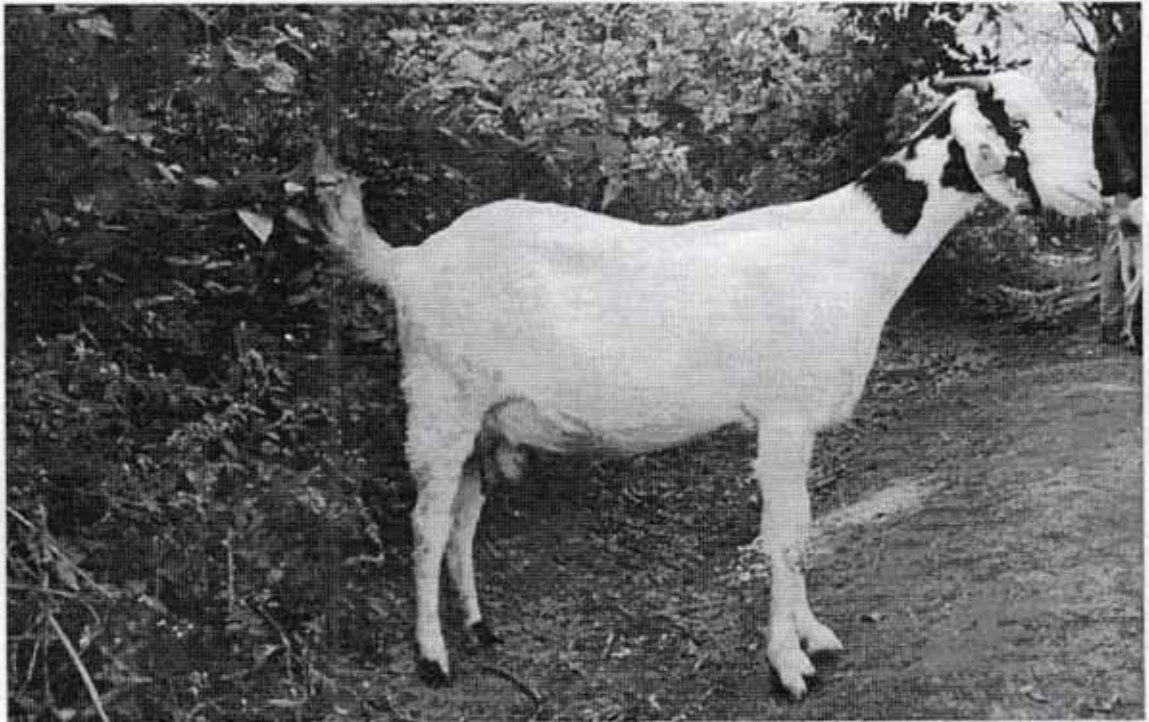
The continuous outbreak of Foot and Mouth and other diseases in crossbreds and the shorter productive life, lack of heat tolerance discourage many farmers to continue crossbred cattle rearing.

As a result Vechur is found very suitable for a farmer who cannot afford sophisticated management but at the same time requires milk for household nutrition security. More so this breed of cows fit into the scattered habitation pattern of Kerala homesteads with small land holdings.

The Vechur conservation Trust is one working for conservation of the domestic animals and birds of Kerala. This pioneer NGO is doing developmental and research work of conservation of Vechur and other breeds and species with people's participation and in collaboration with Kerala Veterinary and Animal Sciences University and farmers.

Observations made on 30 crossbred cows and more number of Vechur cows showed that Vechur cows are more economic. This outcome was due to low inputs including labour and veterinary aid as well as ease in management. This is a finding from a project implemented by Vechur Conservation Trust with the financial support from Ministry of Science and Technology. All these are increasing the sustainability of this traditional breed thereby aiding conservation.

This conservation is an example that always Government policies may not be full proof and involvement of Researchers and NGOs in policy making and implantation would benefit the farmers. Such a collaboration only can save the traditional breeds. It was a team work that revived Vechur cattle.



Special mention is to be made about Kerala State Biodiversity Board. This is the only Government agency which has realised the need for conserving traditional breeds and species of plants and livestock. The Germplasm Centre of the Vechur Conservation Trust is maintained with the financial support from the Board. Equally or more important is the moral support and cooperation extended by board.

Animal identification and record keeping is done for genetic improvement of cattle. Vechur Conservation Trust is doing Microchipping in addition to ear tagging for proper identification.

Vechur cattle have been saved from extinction due to a collective effort, despite many ordeals and obstacles. Instead of just being yet another variety listed among the thousands that have been going into oblivion, the Vechur is now a living reality, providing farmers with a viable, economical and sustainable resource. More financial support is needed to ensure that the number of these animals can be increased effectively, making them available for more.

Kasargod cattle was another variety saved since 1989. This was the second in the series of conservation undertaken under the leadership of Sosammalye. Kasargod cattle variety is yet to be recognised as a breed. But the population size is much more than Vechur. These cows are also sustainable to the farmer as it provides milk for the household. The use of manure in organic/natural farming changes the system to one with lower input.

Produce are used as medicines and also are of cultural importance. Bhasmam from dung made during Sivarathri time is ritual of some communities.

Attappady Black goats

The Attappady hills of Western Ghats are located in the north eastern part of Palakkad district of Kerala. This region is inhabited by some of the major tribal communities of the State known as Irulas, Mudukas and Kurumbas. The tribal economy is mainly dependent on goat rearing and some agricultural activities. The local goat variety evolved and developed solely by these tribes over the ages, are medium sized, lean slender bodied and black in colour. They have bronze colored eyes and black horns with curved backward oriented tips. These black goats are poor milk producers but reared for meat and manure. The goats are managed mainly by women and old people. The system is much different compared to other livestock rearing systems and even other goats. These goats are taken out for browsing in the morning to the forest areas and they are brought home in the evening. With restrictions on use of forest area the flock size per family is decreasing and now it is generally less than 20. The breeding takes place when they are taken out. There is controlled breeding. As bucks of other breeds roam in the area the dilution of the breed takes place at a faster rate. The estimated total population of Attappady black goats in their breeding tract was below 10000 in 2004 putting this breed of goats under the insecure category A recent study shows more reduction in population size and the percentage of Attappady goats to the total goat population. Hence it is inevitable to adopt conservation efforts for this genetic resource.

These goats are not generally sold by the tribal goat keepers. They sell them only in emergencies or on occasions like marriage, death in the family, school reopening and such. They consider the goats as reserve money or as a bank deposit.

The survey and characterisation of the breed was initiated by Sosammalye and continued by Stephen Mathew and T.V.Raja in the Kerala Agricultural university. This led to the recognition of Attappady goat as a national breed. The details are published in the FAO journal.

At present the Vechur Conservation Trust is working on Attappady Goats through a FAO project as per the Global Plan of action outlined as per CBD

This was the only approved goat breed of Kerala. With the policy of importing exotic goats and even Indian goats like Jamnapari Malabari breed got much diluted.

Agricultural University showed Malabary goats are more sustainable and economic compared to a few other breeds. Saanen Boer and other exotic breeds failed in Kerala. But the fancy for exotic breeds in Kerala is the important cause of losing traditional animals.

The policy makers should have proper awareness on the need of conserving traditional breeds. The administrators, policy makers, the scientists, breeders, the livestock keepers and young students who are to be these wards of nature -all have to come together to decide on the conservation plan to be adhered to for implementation.

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News Publications

12/30/13

UNDP project to protect Vechur cow - The Hindu

THE HINDU

Today's Paper » NATIONAL » KERALA

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UNDP project to protect Vechur cow

By S. Lakshmi

Community plan for sustainable conservation



Native breed: Vechur cow.

A project of the United Nations Development Programme (UNDP) has been launched for community partnership in sustainable conservation of Vechur and other native cattle of Kerala.

The launch of the project, being implemented by the Vechur Conservation Trust (VCT), coincides with the 25th anniversary of the establishment of a unit for conservation of Vechur cow at the Kerala Agricultural University (KAU). The unit is now a part of the Kerala Veterinary and Animal Sciences University.

The Vechur cow, a rare breed of *Bos indicus* cattle, has an average length of 124 cm and height of 87 cm. According to the Guinness Book of Records, it is the smallest cattle breed in the world. It is a low-maintenance breed. In 2000, the Vechur cow was listed on the FAO's World Watch List of Domestic Animal Diversity, in its 'Critical-Maintained Breeds List'. Only about 200 Vechur cows reportedly exist today.

The Vechur cow was reportedly saved from extinction by the conservation efforts at the KAU under the leadership of Sosamma Iype, the then Professor of Animal Breeding and Genetics. She is now Managing Trustee of the VCT, founded in 1998.

"The conservation efforts will yield results only if farmers develop a business model. The UNDP project is aimed at helping farmers in this respect," she said.

KVASU Vice-Chancellor B. Ashok said that the university was ready to work in tandem with the VCT for conservation of native cattle.

Arun Kumar, president of the Indian Veterinary Association, expressed concern over the alleged indiscriminate breeding by certain agencies in the name of Vechur conservation.

"The conservation efforts of the past 25 years will be reversed if the government continues to supply semen from bulls purchased from unknown sources," he said.

A project of the Food and Agriculture Organisation (FAO) on Attappady Black goats has also been launched.

A project for conservation of Cheruvaly cow has also been started.

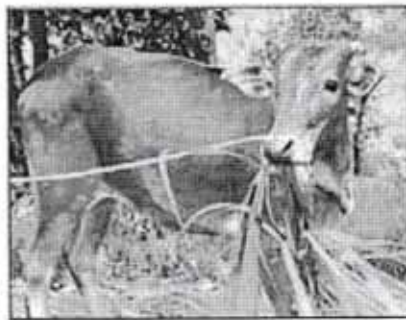
Printable version | Dec 30, 2013 12:23:06 PM | <http://www.thehindu.com/todays-paper/tp-national/tp-kerala/undp-project-to-protect-vechur-cow/article5476575.ece>

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THE TIMES OF INDIA

Now, identity tags for Vechur cows too

T Ramavarman, TNN | Jan 23, 2015, 01.11PM IST



The microchip implants will help correctly identify the cow's pedigree and curb sale of their fake varieties. The cattle that get an implant will get a pedigree certificate from the Vechur Conservation Trust

THRISSUR: Veterinary experts involved in the conservation of Vechur cows have launched a programme to implant microchips into the indigenous cattle.

This will help correctly identify their pedigree and curb sale of fake varieties of the cows.

The cattle that get a microchip implant will be given a pedigree certificate by the Vechur Conservation Trust.

The hype around the medical benefits of indigenous cattle like Vechur cows have led to a sky-rocketing of their prices, in some cases to up to Rs 1.5 lakh. Fraudsters have started exploiting the situation by selling dwarf cows at exorbitant rates, presenting them as the Vechur breed. Though microchip implants have been used in pigs, dogs and elephants, this will be the first time they will be tried out in cattle owned by farmers in Kerala, said Vechur Conservation Trust managing trustee Dr Sosamma Iype.

The chip, with the animal's pedigree data, will be implanted in their left ear using a syringe.

This data can be tracked later with the help of a reader. A plastic identification card will also be attached to the right ear of the cows.

"We had implanted the microchips in around 35 Vechur cows earlier and the results have been satisfactory.

This has prompted us to cover all such cattle owned by the farmers," said Dr Sosamma.

The chips have been tried out in certain cross-bred varieties of pigs in the pig breeding farm of the College of Veterinary and Animal Sciences, Mannuthy for the last one-and-a-half years, according to

the farm's head Dr A P Usha. "The microchips help us know the correct sire and dam and thus help us avoid inbreeding," she said.

There are around 2,000 Vechur cows as per rough estimates, said Dr Sosamma.

Many of them have been sold to individuals and farms outside the state and there are no records of the exact number of the breed in the state now, she added.

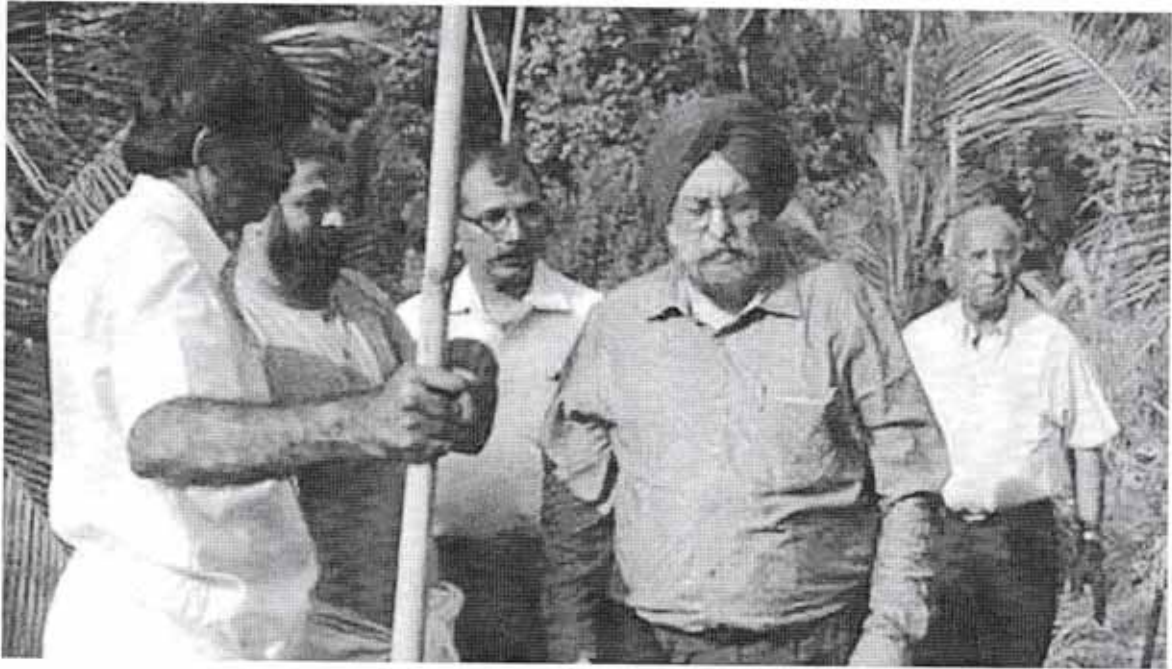
The micro-chipping programme will be formally inaugurated by forest minister Thiruvanchoor Radhakrishnan at Kottayam on Monday.



THE NEW INDIAN EXPRESS

After Neera, Here's Another Healthy Drink - Packaged Vechur Cow Urine

By Dhinesh Kallungal | Published: 24th October 2014 06:06 AM | Last Updated: 24th October 2014 06:06 AM



Bhoosanjeevany being prepared

THRISSUR: Since ancient times cow's urine was considered to be auspicious. It was thought that having a cup of virgin cow's urine in the wee hours of morning will cure a host of diseases including cancer. And hence, there had been a steady increase in the demand for cow's urine especially among the Hindu's in North India.

Soon Keralaties too will get a chance to have a warm cup of distilled cow's urine before day break. For the first time in the country, the Vechur Conservation Trust, a trust formed to save Vechur cows from extinction, has decided to cash in on the growing trend by packaging Vechur cow's for human consumption. The distillation will be carried by taking precaution to preserve all its medicinal properties.

Dr Sosamma Iype, retired Professor of Animal Breeding and Genetics, KVASU, who was instrumental in saving Vechur cows through a University-funded project, said that the trust will soon start manufacturing cow's urine products on a commercial scale in the state. "Our first product will be Gomu, distilled Vechur cow urine, which ayurvedic medicine manufacturing companies can make use of for producing medicines like eye drops, drugs for stomach ailments, toothpaste, bathing soaps, herbal powdered medicine, among other things," she said.

"We have already prepared Gomu on experimental basis by distilling cow's urine with the help of Vechur breeders using traditional methods as part of the promotion programme. We got a very positive response for the urine during promotion meets which had been held at various parts of the state. It is said that the urine is very effective in controlling blood pressure, high blood cholesterol, diabetes, asthma, psoriasis and certain other diseases. A lot of people use it on a daily basis and drink it early in the morning on empty stomach," she added.

Besides distilled cow pee, the trust will also bring out two other value-added products, Vechur Ghee and Bhoosanjeevany. Bhoosanjeevany is a modified form of Ghanajeevamrutha, a kind of bio-fertilizer. As the name suggest, it's a bio-fertilizer made by mixing pulverised dried dung of Vechur cow with jaggery, bengal gram powder, handful of top soil and cow's urine. This fertiliser will work as catalyst and help restore fertility of the soil which had been destroyed by heavy usage of chemical fertilisers and pesticides. The cow dung with its good microbes enriches the soil in a biological manner and helps to bring back the original quality, said Dr Abraham Varkey, retired professor, KAU, and partner of the project.

"Vechur Ghee will be produced using Vechur cow's milk, which is famous for its high medicinal values due to the presence of A2 beta-lactalbumin protein and higher arginine content which is good for the health of convalescing people," said Dr T P Sethumadhavan, director of entrepreneurship, Kerala Veterinary and Animal Husbandry University.



THE NEW INDIAN EXPRESS

Holy Cow Small Packs a Big Punch

By Dhinesh Kallungal | Published: 20th December 2014 10:00 PM | Last Updated: 20th December 2014 08:09 AM



Pic: Ajesh Madhav

The Vechur cow was on the brink of extinction in 1989 when Sosamma Iype, professor of animal breeding and genetics, along with likeminded conservationists in Kerala, rolled up their sleeves and worked relentlessly to save the rare animal through a conservation project that has spanned 25 years.

This month, the Vechur Conservation Trust, a body formed to conserve domestic animal diversity, is on a mission to electronically tag all Vechur cows in the country to check the 'genetic pollution' of the breed in the 25th year of the conservation project.

“The decision to tag the animals was taken following a series of complaints of genetic pollution of the species after calves of Vechur cow bred with local ox varieties were sold as Vechur cows in the market,” says Sosamma.

The Trust will soon launch new Vechur cow products such as distilled Vechur cow urine that helps in treating high BP, high blood cholesterol, diabetes, asthma, and other diseases.

Sosamma says it will take some time to implant the microchips on around 3,000 Vechur cows spread across the country. The cow is a rare breed of *Bos indicus* cattle that has an average length of 124 cm and height of 87 cm.

Named after the village Vechoor in Kottayam, Kerala, the cow, the smallest indigenous breed in the world according to the Guinness Book of Records, was valued for the large amount of milk it produced despite being requiring not as much feed. “It was the conservation project initiated by the Kerala Agriculture University in 1988 under my stewardship along with a group of vet students that created a rare milestone in the conservation of this cow,” says Sosamma.

When the idea of working to safeguard the threatened breed took shape in 1988, the then Kerala Government had been actively promoting the massive cross-breeding programmes with exotic bulls to increase milk production under the Kerala Livestock Improvement Act. So Sosamma and her team were virtually going against the policy of the state government. “I had to face a lot of hardships in our fight for safeguarding the rare breed that would otherwise be destined for oblivion,” she said.

“In the early 90s, Sosamma and her husband Dr. Abraham Varky, who is also a veterinarian, along with a group of young vet graduates had spent years searching for purebred animals of Vechoor by travelling to remote villages in Pathnamthitta and Kottayam to find communities of local breeders, who raise the rare breed,” says T. P. Sethumadhavan, director of entrepreneurship, Kerala Veterinary and Animal Sciences University.

The group also had to deal with scepticism from environmentalists and a section of colleagues. Detractors alleged the team was working against the government policy by reintroducing an unproductive species. Not just that Sosamma was accused of colluding with the Roslin Institute in Edinburgh to patent the cow’s genetic code when the project became a success. Investigation into the charges proved they were false, says Sethumadhavan.

The Kerala government, which once opposed the project, is now giving subsidies to Vechoor breeders to promote them when the cow turned out to be one of the most sought after livestock in the dairy sector of the country, says Dr. Abraham Varky.

Though the cow yields only around 2.5 litres milk per day on an average, it has high medicinal values and contains the small fat globule, A2 beta-lactalbumin protein.



THE NEW INDIAN EXPRESS

Breeding Fraud: Vechur Cows to Be Electronically Tagged

By Dhinesh Kallungal – THRISSUR | Published: 24th December 2013 07:30 AM | Last Updated: 24th

December 2013 09:30 AM

The Vechur Conservation Trust, a body formed to conserve domestic animal diversity in the state, is planning to electronically tag all Vechur cows in the country with microchips to check the 'genetic pollution' among the breed.



Dr. Sosamma Iype, Professor of Animal Breeding and Genetics, who was instrumental in popularising the Vechur breed in the country, told Express that the Trust has initiated steps in this regard and would soon submit a Detailed Project Report to the Animal Husbandry Department and the Kerala Veterinary and Animal Sciences University.

“The decision was taken following a series of complaints of genetic pollution of the species, after calves of Vechur cow bred with local ox varieties were sold as Vechur cows in the market,” Dr. Sosamma said. There were only around 3,000 Vechur cows, a rare breed of *Bos indicus* cattle with an average length of 124 cm and height of 87 cm, in the country.

“But of late, some unscrupulous businessmen have been indulging in an immoral business of cross-breeding Vechur cows, disregarding the side-effects, and selling them as pure Vechur cows,” she said.

The KVASU had stopped accepting bookings for the purchase of animal, around four years ago, as it could not meet the demand. The Vechur breed had found a place in the ‘Critical-Maintained Breeds List’ of the FAO’s World Watch List of Domestic Animal Diversity in 2000. The KVASU has also started exploring possibilities to broaden the base stock of the animal in its cattle sheds in the state through ‘cloning’ as conventional breeding has certain limitation when it comes to meeting the demand, said Dr. K. R. Raghavan of KVASU. However, the University is yet to take a final decision on it, he said.

Dr. B. Asok, Vice-Chancellor of the KVASU, said it’s time that cloning is utilised to augment Vechur cow population, as the breed is disease-resistant. However, he said the cloning project is likely to be delayed as the team entrusted with developing conservation measures for the Vechur cow has not performed well.



വെച്ചൂർ പശുക്കൾക്കു മൈക്രോ ചിപ്പും തിരിച്ചറിയൽ രേഖയും വരുന്നു

ഫ്രാങ്കോ ലൂയിസ്

തൃശ്ശൂർ: പശുക്കൾക്കും തിരിച്ചറിയൽ കാർഡും നമ്പറുള്ള മൈക്രോ ചിപ്പും വാശസൂചനാ പത്രികയും വരുന്നു. കേരളത്തിന്റെ തനി നാടൻ പശുവെന്നറിയപ്പെടുന്ന വെച്ചൂർ പശുക്കൾക്കാണ് തിരിച്ചറിയൽ കാർഡും മൈക്രോ ചിപ്പും

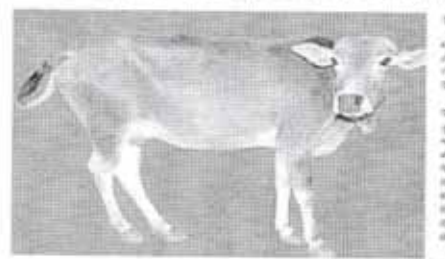
വിനർ ഡോ. ജോണി ജോർജും വ്യക്തമാക്കി.

വെച്ചൂർ പശു സംരക്ഷണത്തിന് 25 വർഷമായി പ്രവർത്തിക്കുന്ന ട്രസ്റ്റ് നാടൻ പശുക്കളുടെ വാശശൃംഖല ഉറപ്പുവരുത്തുന്നതിനാണ് ആധുനികമായ തിരിച്ചറിയൽ രേഖ

ന്നുണ്ടെന്നു പ്രഖ്യാപിക്കുന്ന ചിലർ തട്ടിപ്പുകളുടേതല്ലാത്തതും അതിലേറെ തുക ഈടാക്കുന്നുണ്ട്. തട്ടിപ്പിനിരയായവരിൽ പലരും പ്രമുഖരും സമ്പന്നരുമാണ്. കബളിപ്പിക്കപ്പെട്ടതായി വളരെ വൈകിയാണ് പലരും മനസ്സിലാക്കിയത്. ജാത്യംമൂലം ആരും നിരന്ദന

നാടൻ പശുബന്ധന വ്യാജേന മോഹിനികാടൻ പശുക്കളെ വിറ്റും തട്ടിപ്പ്

പ്രത്യേക ഡെലേറ്റ്
ആദ്യം കേരളത്തിലെ തനി നാടൻ പശുക്കൾക്കും തിരിച്ചറിയൽ കാർഡും നമ്പറുള്ള മൈക്രോ ചിപ്പും വാശസൂചനാ പത്രികയും വരുന്നു. കേരളത്തിന്റെ തനി നാടൻ പശുവെന്നറിയപ്പെടുന്ന വെച്ചൂർ പശുക്കൾക്കാണ് തിരിച്ചറിയൽ കാർഡും മൈക്രോ ചിപ്പും



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ആദ്യം കേരളത്തിലെ തനി നാടൻ പശുക്കൾക്കും തിരിച്ചറിയൽ കാർഡും നമ്പറുള്ള മൈക്രോ ചിപ്പും വാശസൂചനാ പത്രികയും വരുന്നു. കേരളത്തിന്റെ തനി നാടൻ പശുവെന്നറിയപ്പെടുന്ന വെച്ചൂർ പശുക്കൾക്കാണ് തിരിച്ചറിയൽ കാർഡും മൈക്രോ ചിപ്പും

ഏർപ്പെടുത്തുന്നത്. ഇന്ത്യയിൽ ഇതാദ്യമായാണ് പശുക്കൾക്കു മൈക്രോ ചിപ്പും തിരിച്ചറിയൽ കാർഡും ഏർപ്പെടുത്തുന്നത്. വെച്ചൂർ കൺസർവേഷൻ ട്രസ്റ്റിന്റെ നേതൃത്വത്തിലാണ് വെച്ചൂർ പശുക്കൾക്കു മൈക്രോ ചിപ്പുകളുള്ള തിരിച്ചറിയൽ സംവിധാനങ്ങൾ സജ്ജീകരിക്കുന്നത്. ഇതിനകം സംസ്ഥാനത്തെ മുപ്പത്തോളം വെച്ചൂർ പശുക്കൾക്കു മൈക്രോ ചിപ്പ് ഘടിപ്പിച്ചുകഴിഞ്ഞു. കേരളത്തിൽ രണ്ടായിരത്തിയെട്ടോളം വെച്ചൂർ പശുക്കൾ ഉണ്ടെന്നാണ് കരുതുന്നത്. ഇവയ്ക്കെല്ലാം ചിപ്പ് ഏർപ്പെടുത്താനാണ് പരിപാടി.

ഏർപ്പെടുത്തുന്നത്. പരിപാടിയിലെ ഉദ്ദേശ്യം 26 നൂ രാവിലെ 10,300 കോടിയിൽ മന്ദിര തിരുവഞ്ചൂർ രാധാകൃഷ്ണൻ നീർവഹിക്കും. നബാർഡും സംസ്ഥാന ജൈവവൈവിധ്യ ബോർഡും ചേർന്നാണ് പരിപാടി സംഘടിപ്പിക്കുന്നത്. സാധാരണ നാടൻ പശുവിനെയും അയൽസംസ്ഥാനങ്ങളിൽ നിന്ന് ഇറക്കുമതി ചെയ്ത പശുക്കളെയും വെച്ചൂർ പശുവെന്നു തെറ്റിദ്ധരിപ്പിച്ചു മോഹിനികാടൻ വിറ്റു തട്ടിപ്പു നടത്തുന്നതു വ്യക്തമാക്കുന്നു. മൈക്രോ ചിപ്പ് ഏർപ്പെടുത്തുന്നതോടെ ഇത്തരം തട്ടിപ്പുകൾ തടയാനാകും. സാധാരണ മുന്തിയതിനം സങ്കരയിനം പശുക്കൾക്ക് 50,000 രൂപയാണ് വില. എന്നാൽ അപൂർവ്വതയായ വെച്ചൂർ പശുവിനു ലക്ഷം രൂപയിലേറെയാണ് വില. ധാരാളം വെച്ചൂർ പശുക്കളെ വളർത്തു

ത്തനവം ബർ ജാസത്തിൽ ദീപിക ഇതുസംബന്ധിച്ച വാർത്ത പ്രസിദ്ധീകരിച്ചിരുന്നു. വെച്ചൂർ പശുവിന്റെ പാലിനു പ്രത്യേക ഔഷധ ഗുണമുണ്ടെന്നാണ് വെറ്ററിനറി, ഡയറി സയൻസ് വിദഗ്ധർ സാക്ഷ്യപ്പെടുത്തുന്നത്. സാധാരണ പശുവിന് പാലിന് ലിറ്ററിനു 36 രൂപയോളമേ ലഭിക്കൂ. വെച്ചൂർ പശുവിന്റേതിന് ഇരട്ടി വില നൽകണം. ലിറ്ററിനു നൂറു രൂപ ഈടാക്കുന്നവരുമുണ്ട്. നെയ്യിനും ഇരട്ടിയിലേറെ വില വ്യത്യസ്തമുണ്ട്. പാലിനു മാത്രമല്ല പാണകത്തിനും ഗോമൂത്രത്തിനും മെല്ലാം ഈ വ്യത്യസ്തമുണ്ട്. സാധാരണ സങ്കരയിനം പശുവിനു 120 സെന്റീമീറ്റർ ഉയരവും 350-400 കിലോ തൂക്കവുമുണ്ടാകുമെങ്കിൽ വെച്ചൂർ പശുവിനു 90 സെന്റീമീറ്റർ ഉയരവും 135 കിലോ തൂക്കവുമാണുണ്ടാകുക. സാധാരണ പശുവിന് എട്ടു ലിറ്റർ പാൽ ലഭിക്കുമെങ്കിൽ വെച്ചൂർ ഇനത്തിന് രണ്ടോ മൂന്നോ ലിറ്ററേ ലഭിക്കും.

Meet the Tiniest Dairy Cow in the World! Vechur Cattle

By Patrice Lopatin

Vechur cattle originated in the area around the village of Vechur in the southwest state of Kerala, India. The tiny gentle cows were so greatly valued that at one time wellwishers presented them as wedding gifts.

These native cattle have been rescued from the brink of extinction by geneticist Dr. Sosamma Iype. Dr. Iype received help from her students who volunteered to search for the last remaining cattle in remote areas and temples, where they had been protected from government policies that forbade people to own them.

First eight and then later twenty-five individual cattle were found to help preserve the precious germplasm for future generations. Over twenty-five years of dedicated hard work has been done to save these cows. Many formidable impediments and obstacles stood in the way; however, the outcome was ultimately a success story: the Vechur Conservation Trust was created in 1998.

Now there is a wide appreciation for the great value of these little cows and their numbers are gradually being built up so that marginal farmers and others may benefit from the nourishing milk and other dairy products they provide.



The author feeding a Vechur cow

A SPECIAL BREED

Their exceptionally small, manageable size (about the size of a large goat breed), and pleasant disposition (they are often considered a family pet) plus a very long, productive life span make these cattle of particular value and winsomeness. They are intelligent, hearty, clean, disease resistant and adapted to high heat conditions, being native to tropical Kerala, India.

Vechur cows are not prone to mastitis, parasites, or hoof and mouth disease, and they calve easily. The milk of Vechur cattle is outstanding, with a butterfat content of up to five percent, and with a smaller fat globule size from that of other dairy breeds, making the milk easily

digestible. This milk is considered to have extraordinary medicinal properties and there has been some research claiming that the milk from such cattle helps lower the risk of many chronic conditions such as diabetes, asthma, autism, allergies, schizophrenia, SIDS, and cardiac disease.

The Vechur breed carries the A2 beta casein gene variant which has been linked to a lower incidence of the conditions mentioned above. See web references 1 and 2 below for more information.

VERSATILE

The daily milk yield is between three to four quarts (three to four liters). The Vechur does not require much grazing space (only a quarter acre per cow), and no grain supplementation is necessary. These cows will be happy to eat a wide variety of vegetation (some of which is extremely fibrous and tough), along with grass, banana peels and other kitchen vegetative leftovers!

The Vechur cattle can also be used as draft animals and due to their small size, do not have a damaging impact on the land. Their manure does not smother the plant life in fields due to its shape and dry consistency. It is easier to handle than manure from large cows and it breaks down easily into compost. Even their urine has special properties that make it ideal for growing culinary mushrooms!

In this period of escalating climate change it is crucial to preserve such animals for current and future generations. Vechur cattle are a crucial element in maintaining the planet's biodiversity.

OWNING A VECHUR

Owning a Vechur is a step towards sustainability and independence from the denatured food being turned out by factory farming with genetically altered, inhumanely treated, sickly animals that require antibiotics to be kept alive for their short and miserable lives.

Corn and soy-laden grain exact a high cost financially, environmentally and are a detriment to health.

Here is the perfect cow for individuals and families, one that does not represent a huge carbon footprint and can provide you with healthy, rich raw milk.

Donations are needed to purchase more land for breeding stock in this very crowded part of India, where open land is scarce and expensive. Animal caregivers need to be paid and a high-tech facility for the freezing of semen and embryos needs to be established so that one day this amazing cow will be available for all who want one!

For further information and to make donations go to: vechur.org and/or write to patricelopatin@gmail.com.

WEB REFERENCES

1. <http://www.thehindu.com/news/states/kerala/article544392.ece>
2. <http://www.ncbi.nlm.nih.gov/pubmed/16403684>
3. Video about the Vechur: <http://ibnlive.in.com/videos/26833/vechur-back-from-brink-of-extinction.html>



The Vechur is an ideal animal for India!

Patrice Lopatin is a conservationist/environmentalist, trained chef, organic gardener, artist, writer of commentaries. She studies nutrition, sustainability, and animal behavior/intelligence. Patrice has run a whole foods nature retreat in Goshen, Vermont called High Meadow and visited India for several months as a volunteer assisting Dr. Iype and the Trust in any way possible. The author will be interviewed on local television in the next few months and a Youtube video will be made available with photos and film footage. To learn more about the history of the rescue of Vechur cattle, visit <http://ibnlive.in.com/videos/26833/vechur-back-from-brink-of-extinction.html>



Vechur Conservation Trust