

OVERVIEW ON EXISTING BREEDS AND ISSUES OF CONSERVING INDIGENOUS BREEDS

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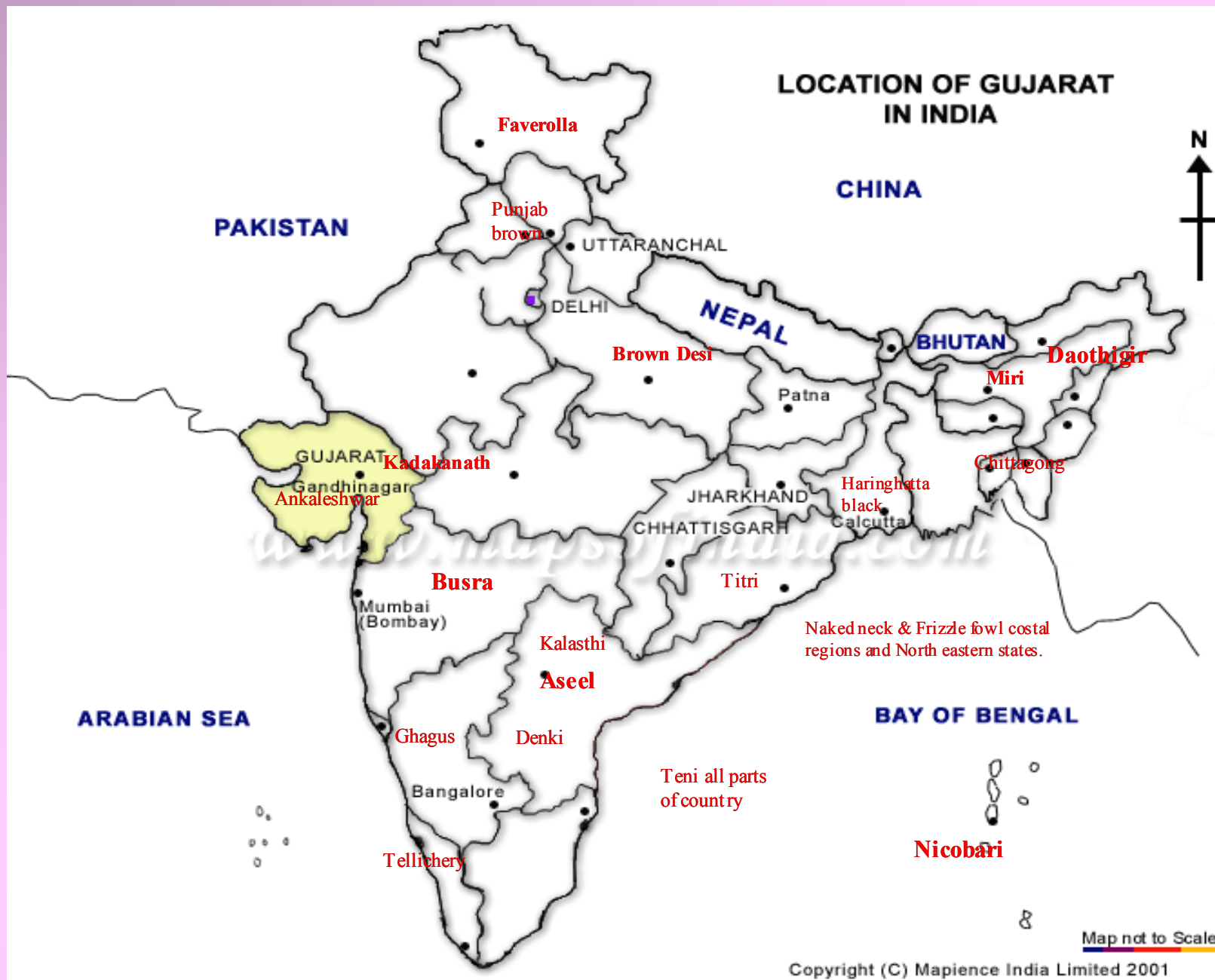
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DOCUMENTED INDIAN BREEDS/ECOTYPE OF CHICKEN

<u>Breed</u>	<u>Region</u>	<u>Breed</u>	<u>Region</u>
Aseel *	AP	Ankaleshwaar	Maharashtra
Kadakanath *	Madhya Pradesh	Busra	Gujrat
Nicobari *	Andaman & Nicobar	Brown Desi	Uttar Pradesh
Naked Neck *	Coastal Regions	Chittagong *	Eastern India
Daothigir *	Assam	Kalasthi	AP
Denki	Andhra Pradesh	Kashmir Faverolla *	Kashmir
Ghagus *	Andhra & Karnataka	Miri *	Assam
Haringhatta black	West Bengal	Punjab Brown	Punjab, Haryana
Tellichery *	Kerala	Titri	All parts of country
Frizzle *	Coastal Region	Teni	All parts of country

DOCUMENTED INDIAN BREEDS/ECOTYPE OF CHICKEN



Need for genetic resource conservation

- **Fast decrease in the population of many native breeds and varieties of chicken**
- **Some are facing in danger of extinction.**
- **Late sexual maturity, poor egg production, slow growth, broodiness, smaller egg and body size are some disadvantages of native birds.**
- **For rapid improvement in the productive capacity of poultry for eggs and meat, breeders have taken recourse to the introduction of high yielding exotic germplasm.**

- **The breeding systems adopted include crossing of exotic breed with local breeds or even total replacement of local birds with the exotic ones. As a result many different genetic combinations are being produced and there is gradual diminution and even ultimate disappearance of some of the local breeds.**
- **Native breeds are gold mines of genomes and major genes for improvement of high yielding exotic germplasm for tropical adaptability and disease resistance.**
- **Conservation of these breeds will act as source of variation for future poultry improvement.**
- **Native germplasm have great utility for backyard poultry production.**



Flock of Ankaleshwar on tree branches







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What to be conserved

- For academic and scientific reasons, all breeds and strains with minor variation are potential candidate for conservation.
- However the cost of infrastructure facilities involved in conservation will make it necessary to differentiate between breeds to be conserved.
- This decision must be made by responsible authorities such as Government of India and / or large breeding organizations.
- In India Bureau of Animal Genetic Resources has been assigned this job.

What to be conserved

- In any case breed must be evaluated before one can decide rationally which of them to be preserved. There should be common stock present in the tests at the several locations.
- Bowman (1974) stressed that it is important if possible to determine the genetic relationships between breeds and to maintain those with distinctive characteristics indicative of unique genetic material irrespective of present economic importance . Aim should be to conserve as big a range of existing irreplaceable genetic variation as possible. Turner (1972) had also made the same suggestion.

Present status of evaluation and conservation

- 1. Work done at CARI, Izatnagar :** Aseel (Peela & Kagar), Kadakanath – Evaluated and conserved
Ankaleshwar – being evaluated
Naked neck and Frizzle ecotype – conservation through utilization
- 2. Work done at CARI, Port Blair :** Nicobari – evaluated and conserved
- 3. Work done by NBAGR, Karnal :** Various breeds evaluated through field survey & net work project but flock is not being maintained
- 4. Work done by state Govt :** Random bred population of Kadakanath and Aseel are also being maintained at Jhabua and Jagdalpur hatchery respectively by Department of Animal Husbandry, Government of Madhya Pradesh.

Suggested Master plan for conservation

Phase I

Establishment of planning and implementation committee:

Conservation is a very costly affair, which needs proper planning source of regular financing and follow -up the action plan. National institution, State Governments, State Agricultural Universities, Commercial breeders as well as fancy breeders should be included in the conservation work. Standing Advisory Committee (SAC) / Avian Genetic Resource Task Force (AGRTF) should be established including members from above mentioned various organizations to plan the conservation strategies and its follow up.

Network project for survey and documentation of stocks:

- A network project will be a desirable proposition having the coordinating unit at CARI Izatnagar and centers at various agricultural universities of different states. **The work plan of the network project will be as follows:**
- **Survey of the home tract of the respective breed on the basis of the questionnaire developed by NBAGR, Kamal.**
- **Collection 250 - 500 fertile eggs / 100 females and 20 males of each available breed ecotype in the region of the respective centre.**
- **Multiplication of flock of each breed / ecotype and its morphological characterization and evaluation of growth, and production performance will be done at the respective centre.**
- **Sample for measuring the immune competence status and molecular characterization will be collected by Central Avian Research Institute / NABGR). On the basis of the genetic diversity of the breed/ecotype, specific genes (if any) and recommendation of the AGTRG / standing advisory committee the particular breed / ecotype will be selected for its conservation.**

Phase - II

Conservation, Improvement and utilization of native germplasm

Conservation / Maintenance in living form: The breed ! ecotype which qualify for its conservation will be maintained in living form at least at two locations i.e. at its evaluation centre and at national centre for conservation.

Ex-situ conservation: Semen.
Primordial germ cells, embryos,
DNA and tissue samples of
selected stocks will be sent to
NBAGR, Kamal for its
cryopreservation

Improvement of Native Germplasm and its conservation in natural habitat:

- Improvement of few important native breed is important for its sustainable production in traditional poultry production system. Improved germplasm will be supplied to respective state government for its multiplication and distribution in its home tract for backyard poultry production. Thus stock will be conserved in its natural habitat.
- It would be a desirable proposition to establish a National Centre on Conservation of Avian Genetic Resources.



Thanks

