

## Efforts and Initiatives to conserve and promote Indigenous poultry.

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**Animal Genetic Resources Conservation Program**

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### Status of Chicken (Yuebja) in Bhutan

- Bhutan is a small country comprising of different agro-ecological regions with diverse climate, natural vegetation resources, topography, possess almost all domesticated animal species.
- Chickens have existed in Bhutanese villages from time immemorial withstanding changes and test of time.
- Chickens in Bhutan are divided into three groups: Exotic, Improved, indigenous.
- Record suggest 63% households in Bhutan raise chickens.(Source Karma Nidup An.GR of Bhutan 2008)
- Found in almost all agro- ecological zones ranging from wet subtropical regions to temperate regions.
- There are ten indigenous lines of chickens.
- Farmers at field in remote areas are the true conservationist maintaining the genetic diversity of local breeds.

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## Status of Chicken (Yuebja) in Bhutan

- More focus on industrial-production systems using exotic and cross-breeds and have overlooked these traditional Backyard Poultry systems.
- The preconceived notions of their poor production potential despite their positive attributes are not duly recognized.
- Indigenous breeds accounts for 83.42%,63.84% as per 2005 and 2009 poultry census respectively.
- Poultry lines like Polum, necked neck, Belochem, Baylaitey and yuebja naap are very rare.
- Selection environment: Natural selection through weather, climate, disease and predators.
- Breeding structure: Random mating amongst native lines. High incidence of inbreeding expected but loss of genetic variation is not studied.
- National policies on livestock development are primarily focused on intensive commercial poultry systems.

## Poultry production system

**There has been a growing interest among farmers to rear poultry as a source of income from the sale of eggs.**

**Chickens are raised in three types of rearing system:**

➤ **Commercial poultry production system:**

Confined to shed, balanced commercial feed is provided, Chickens ,eggs and manure are produced and marketed in near by towns, found in peri urban areas.

➤ **Backyard poultry production system:**

Improved layers are reared under confinement with run space for birds to move during the day. Local feeds like grain, maize, rice are given with ad libitum water. Sheds are made from bamboo and small timbers locally available.

➤ **Free range with night shelter:**

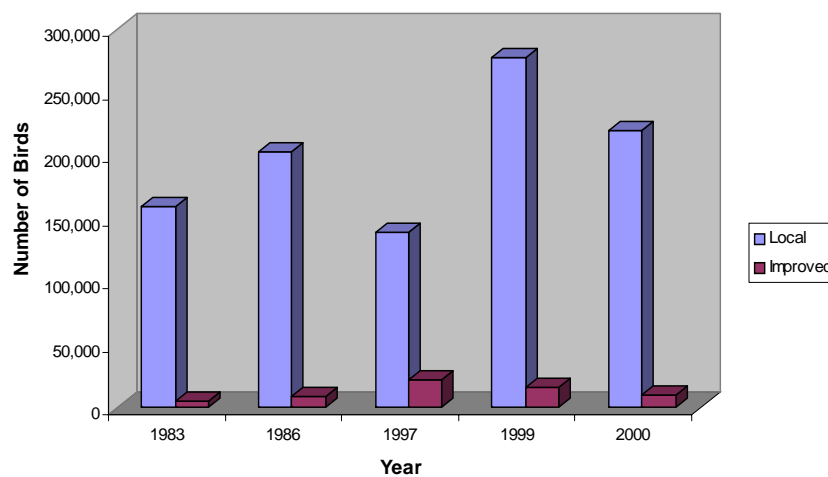
Predominant poultry rearing system, scavenge in open areas, supplement with maize grains, broken rice and kitchen residues. Local breeds that are hardy, low feed consuming, resistance to diseases and pest are popular in this system. (production is 60 to 80 eggs per year) Exotic and improved breed have been supplied but their survivability is very low.

## Utility of Chickens

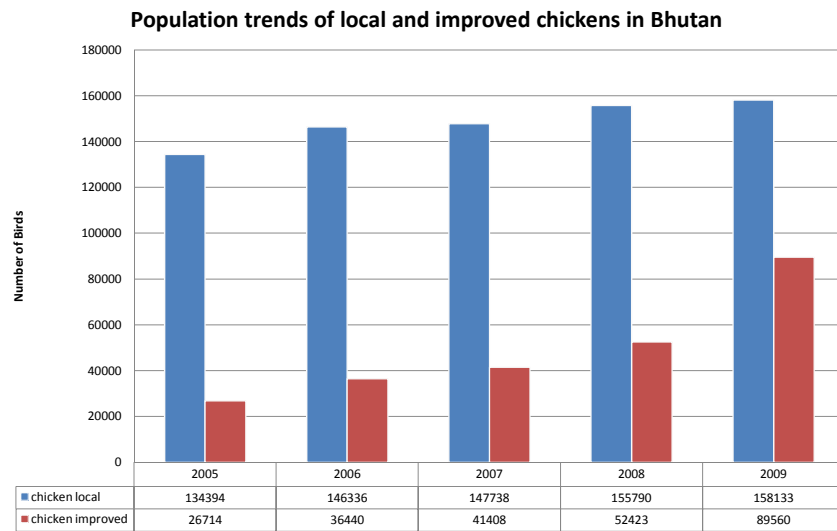
- Source of animal protein in the form of meat and eggs.
- Financial security through sale of meat, eggs and live birds.
- Pest control
- Provide manure for farm use.
- Play an important role in traditional rituals and cultural activities.

## Chicken Population Trends

Comparative numbers of Local and Improved Chickens



## Chicken Population Trends



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## Indigenous Chicken (*Yuebja*) Diversity of Bhutan



**Adapted to environment and local feed resources,**



**Developed natural resistance to diseases and parasites**



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## Conservative efforts

### Methods of Conservation

➤ ***In Situ*** : Conservation of live animal population in native breeding tract.

- Farmer's herds/flocks (5 to 25 birds)
- Multiplier farmer 8 hh. (50-150 birds)
- Birds supplied 1179 nos.
- 130 farmers trained by Dzongkhag.



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### Methods of Conservation contd.

- ***Ex situ*** : Conservation of germplasm outside breed tract

- Nucleus herd ( *In Vivo*)



- Cryopreserved germplasm ( *In Vitro*)



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## Gene Bank collections of Poultry:

Breed/line	Number of males	semen doses
• Khuilay	1	85
• Barred Yuebja	1	61
• Shekheni	1	28
• Yuebja kaap	1	75
• Yuebja naap	3	539
• Kauray	2	37
• Bobthra (JM)	3	507
• Polum	2	112

Utilization part to be worked out in collaboration with DoL.

## Observations

- Traditional scavenging systems have a distinct, niche market, which must be explored further.
- Focus program on an area basis with improve management practices, and marketing is required to strengthen the Backyard Poultry sector.
- Financial and Nutritional Security for Poor Households.
- More focused on replacing local by improved breeds there by decline of chicken diversity
- Rearing native chickens in remote villages is a livelihood activity.
- Limited number of high output breeds are choice of farmer for increasing profitability.
- The government policies and subsidies have often support large scale production rather than small holder system utilizing local genetic resources
- Farmers meet the hh. Needs-meat/eggs and earned a sustained livelihood.
- No record keeping to asses profit/loss.

## Constraints/issues

- Lack of clear cut breed improvement and conservation policy.  
( Contradictory)
- Lack of awareness among the general public on the roles and impact of conservation in future.
- Conservation of local chicken breed bottleneck due to their low productivity.
- Institutes need to address the unique indigenous diversity of poultry into the main stream of development.
- Livestock and poultry census to be enumerated as per specific breed/lines to asses and monitor the population trend.

## Challenges

- The population of 2005 to 2009 : 18% increase in native chicken  
: 235% increase in improved chicken.
- We need to create a situation where value of indigenous Livestock and poultry and their products make economic benefits.
- Explore the production potentials through better management practices.
- Scope of responsibilities

## Way forward

### National Action Plan:

- ❖ Maintenance of diverse genetic base of chickens in the gene bank and nucleus farm is very important under the compelling environment adversities.
- ❖ Explore measure for:-
  - 1 Increasing production (*Breed identification, characterization and Selective breeding*)
  2. On farm conservation (*explore the genetic potentials and monitor performance*)
  3. Exploration of niche markets- organic meat and eggs.
  - 4 Support in marketing
- ❖ Governmental support ( breeding strategy) or incentive payments as interim measure (targeted farmers/ activities).
- ❖ Evolving appropriate strategies for larger scale, in situ conservation of native poultry breeds in their tracts .
- ❖ Finalize who will decide what and subsequent responsibilities.