



# **NATIONAL STRATEGIC PLAN FOR BREEDING OF BHUTANESE MASTIFF (*Bjop-Khyi*)**

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## **List of contributors**

1. Dr. Kinlay Dorji, Animal Health Specialist, NVH Thimphu
2. Dr. N Dahal, Animal Health Specialist, AHD, DOL
3. Dr. Pema Tshewang, DCVO, NVH Thimphu
4. Dr. MP Timsina, Specialist Advisor, DOL
5. Dr. NB Tamang, Program Director, NDRDC, Yusipang
6. Dr. DB Rai, Specialist, NDRDC, Yusipang
7. Dr. Bir Doj Rai, Regional Director, RLDC Wangdue
8. Dr. Vijay Raika, Program Director, NHRDC Bumthang
9. Mr Towchu Rabgay, Chief, LRED, DOL
10. Ms Chimi Wangmo, PPO, RLDC Wangdue
11. Mr Tashi Dhendup, Sr LPO, DOL
12. Mr Golo Tshering, Sr LHS, IYSC, Haa
13. Ms Bhawana Ghalley, F&FS, IYSC, Haa
14. Mr Phub Tshering, LPO, IYSC, Haa
15. Ms Sonam Choki, LPS, NHRDC Bumthang
16. Mr Nima, NMBF, Gasa
17. Mr. Karma, NMBF, Gasa
18. Mr Sonam Rinchen, NHRDC Bumthang

## **GLOSSARY OF TERMS**

**Bjop-Khyi:** (*jo`p-chi*) Bhutanese mastiff dog

**Gene pool:** Pool of superior genetic material

**Genetic material:** DNA material transferrable to offspring

**Phenotypic characteristics:** External appearance in conformity to the breed

**Pure line breeding:** Breeding of elite pure line sire and dam

**Sire:** Male parent in a breeding program

## Table of Contents

GLOSSARY OF TERMS .....	2
INTRODUCTION .....	4
SCOPE .....	5
STRATEGIC ISSUES .....	5
OBJECTIVES .....	5
STRATEGIES .....	5
STRATEGIC ACTION AREAS.....	6
1. Strengthen genetic improvement of <i>Bjop-Khyi</i> through pure line and selective breeding approaches.....	6
2. Encourage participatory breeding program among highland communities to increase <i>Bjop-Khyi</i> gene pool and sustain livelihood of highlanders.....	6
3. Enhance pure <i>Bjop-Khyi</i> population through control of stray dogs and <i>Bjop-Khyi</i> of low genetic merit.....	6
4. Capacity building of technical staff .....	7
5. Institutional linkages.....	7
6. Research & innovation .....	7
Implementation modalities .....	7
Monitoring & Evaluation .....	7
Annex 1: General Breeding Guidelines to implement Strategic plan for <i>Bjop-Khyi</i> .....	8
Breeding objectives.....	8
Breeding plan.....	8
Selection.....	8
Mating system.....	8
Genetic evaluation .....	8
Roles and responsibilities of stakeholders .....	9

## NATIONAL STRATEGIC PLAN FOR BREEDING OF BHUTANESE MASTIFF

### *(Bjop-Khyi)*

#### INTRODUCTION

The Tibetan Mastiff originated from Central Asia and is a representative of an ancient dog group, called the Mastiffs. The mastiff is used in a large number of different roles such as hunting, herding, guarding, guiding, searching, rescuing and companion animal. Tibetan Mastiff are considered as the mighty guardians of the Himalayas and serve as the progenitor of all modern mastiffs.

Tibetan Mastiff breed is found in Tibet, Nepal, Bhutan and North India. These dogs are well adapted to austere and harsh mountain climatic conditions and are known for their remarkable strength and endurance. The mastiff breed began to gain popularity worldwide through recognition by kennel clubs such as Federation Cynologique Internationale (FCI) and American Kennel Club (AKC). The Tibetan Mastiff breed found in Bhutan are similar to those in Tibet. However, the dogs found in Bhutan are well adapted to Bhutanese environment and are referred to as Bhutanese Mastiff, locally known as “*Bjop-Khyi*” (dogs of nomads).

The *Bjop-Khyi* is found in all highland communities in the country and play a significant role as guard dog, protecting highland domestic animals against wild predators, feral dogs and thieves in addition to protecting the owners’ families and their properties. Besides, *Bjop-Khyi* is treasured amongst the most valuable possessions for their excellent guarding characteristics.

*Bjop-Khyi* population is declining over the years due to uncontrolled mating with stray and feral dogs as well as decreasing trend of yak herding communities. Moreover, there is deterioration of inherent genetic characteristics of *Bjop-Khyi* leading to decreased resistance to diseases and loss of natural guarding instincts. This concern was expressed by His Majesty the King in 2017 and commanded the Department of Livestock (DoL) to develop appropriate strategies to revive and promote this unique dog breed.

Subsequently, National Mastiff Breeding Farm at Gasa under National Highland Research and Development Centre (NHRDC) was established to promote and conserve *Bjop-Khyi* as a unique Bhutanese Mastiff breed.

To prioritize and focus in promoting and conserving the *Bjop-Khyi*, the “*National Strategic Plan for Breeding of Bhutanese Mastiff*” is developed.

## SCOPE

The scope of this strategic plan is to provide reliable scientific guide combining indigenous knowledge and technological advances in initiation and implementation of *Bjop-Khyi* breeding program in the country. This also serves as a blue print to regulate private *Bjop-Khyi* breeders & interested entrepreneurs for promotion of this breed.

This strategic plan provides broad framework for establishment of *Bjop-Khyi* nucleus farm for pure-line breeding for genetic improvement, promotion of farmers participation in *Bjop-Khyi* breeding to enhance livelihood and upscale socio-economic status of highlanders.

## STRATEGIC ISSUES

- Declining *Bjop-Khyi* population due to decrease in yak herding communities
- Deteriorating quality of *Bjop-Khyi* (endurance, disease resistance, guarding instincts)
- Inadequate farm infrastructure and facilities
- Inadequate skills and knowledge on *Bjop-Khyi* breeding
- *Bjop-Khyi* not included in the Five-Year development plans
- Weak institutional linkages
- Lack of Research and innovation

## OBJECTIVES

- Revive and promote *Bjop-Khyi* breed that contributes to socio-economic development, community vitality, cultural identity and retain yak herding communities in the highlands.
- Apply systematic breeding program to produce *Bjop-Khyi* as pet animal for pet lovers within and outside the country.

## STRATEGIES

1. Strengthen genetic improvement of *Bjop-Khyi* through pure-line and selective breeding approaches.
2. Promote participatory breeding program among highland communities to increase *Bjop-Khyi* gene pool and sustain livelihood of highlanders.
3. Enhance pure *Bjop-Khyi* population through control of stray dogs and *Bjop-Khyi* of low genetic merit.

## STRATEGIC ACTION AREAS

### 1. Strengthen genetic improvement of *Bjop-Khyi* through pure line and selective breeding approaches

- Strengthen infrastructure and allied facilities for management of elite *Bjop-Khyi* stock on government breeding farm.
- Procure and maintain pure breed *Bjop-Khyi* stock.
- Develop and adopt the standard operating procedure for designing, application, breeding and selection program for *Bjop-Khyi*.
- Produce and supply good quality *Bjop-Khyi* progenies to highland communities and pet owners.
- Conduct adaptive and applied researches in *Bjop-Khyi* breed.

### 2. Encourage participatory breeding program among highland communities to increase *Bjop-Khyi* gene pool and sustain livelihood of highlanders.

- Facilitate implementation of participatory *Bjop-Khyi* breeding programs.
- Initiate *Bjop-Khyi* breeding program through identification of:
  - Herders willing to participate in *Bjop-Khyi* breeding program;
  - Private *Bjop-Khyi* breeders.
- Provide identified breeders with technical support and incentive packages.
- Develop breeding guidelines for participatory program.
- Develop and apply web-based pet registration system and information portal.
- Build capacity of highland communities and private breeders for selection and breeding of *Bjop-Khyi* of desired characteristics.
- Provide advocacy and create awareness through different platforms to promote *Bjop-Khyi* (e.g., conduct dog shows during highland/ mountain festivals).
- Promote trans-boundary knowledge exchange program on *Bjop-Khyi*.

### 3. Enhance pure *Bjop-Khyi* population through control of stray dogs, feral dogs and *Bjop-Khyi* of low genetic merit.

- Select superior quality *Bjop-Khyi* females (minimum 50% of phenotypic characteristics of *Bjop-Khyi*) as a base population.
- Intensify implementation of Dog Population Management Program in highland areas for effective control of stray, feral and *Bjop-Khyi* of low genetic merit.

- Inject pure-line *Bjop-Khyi* breeding stock to highland communities for cross breeding and genetic upgradation of base population.

#### 4. Capacity building of technical staff

- Provide hands on training to technical staff on *Bjop-Khyi* breeding and management.
- Organize periodic exchange visits for technical staff within and outside country to enhance their knowledge and skills.

#### 5. Institutional linkages

- Develop institutional linkages for exchange of knowledge and expertise on *Bjop-Khyi* breeding, genetic evaluation and development.
- Strengthen linkages for import and export of *Bjop-Khyi*.

#### 6. Research & innovation

- Conduct need based research to generate relevant technologies for *Bjop-Khyi* breed improvement.
- Genetic characterization of *Bjop-Khyi* to register as a distinct breed for Bhutan

#### Implementation modalities

- Under the supervision of Department of Livestock (DoL), the Livestock Research and Extension Division shall provide policy guidance/directives and resources for smooth implementation of the plan.
- National Highland Research and Development Centre (NHRDC) shall be apex arm to coordinate implementation of “National Strategic Plan for breeding of Bhutanese Mastiff”
- NHRDC shall liaise with relevant stakeholders particularly with National Veterinary Hospital (NVH), National Centre for Animal Health (NCAH), Regional Livestock Development Centres (RLDCs), Dzongkhags and Local Government for smooth implementation of the plan.

#### Monitoring & Evaluation

- NHRDC shall institute proper Monitoring and Evaluation (M&E) mechanism for smooth implementation of *Bjop-Khyi* breeding program.
- Monitoring shall be carried out through field visits, submission of periodic progress reports to measures outputs and outcomes of the plan.
- Evaluation of the plan shall be carried out twice in five-year plan period to assess the impact and major milestones achieved.



## Annex 1: General Breeding Guidelines to implement Strategic plan for *Bjop-Khyi*

### Breeding objectives

- To revive *Bjop-Khyi* population with desired traits for guarding instincts, disease resistance and adaptability to mountain environment.
- To upgrade gene pool of existing *Bjop-Khyi* population through selective and pure-line (through import) breeding.
- To progress towards recognizing *Bjop-Khyi* as distinct Bhutanese Mastiff in the international arena.

### Breeding plan

To meet the breeding objective, a systematic breeding plan is required. This will include pure line breeding to upgrade the existing *Bjop-Khyi* population thereby achieving progress in desired traits.

### Selection

- Proper selection process shall be instituted to select superior females (minimum 50% of phenotypic characteristics of *Bjop-Khyi*) as baseline population for genetic improvement to fulfill the breeding objectives.
- All female population between 1 ½ -6 years, with sound health, free from any reproductive disorders and considered fit for breeding shall be selected for breed improvement program.

### Mating system

- Proper breeding plan should be drawn to avoid inbreeding in the nucleus farm, private breeders and in highland communities.
- Systematic rotation plan for male breeding stock shall be pursued in highland communities and private breeders to produce high quality progenies.
- Maintain adequate female breeding stock at Government Nucleus Farm to produce and supply breeding males in the field to avoid inbreeding.

### Genetic evaluation

- Implement pet registration database system for proper identification of *Bjop-Khyi* population and traceability.
- Institute data recording system with micro-chips related to identified traits.

- Set bench marks for continuous genetic improvement such as guarding instincts, disease resistance and adaptability for evaluation of the breed.
- Perform genetic characterization with technical assistance from collaborating partners and maintain data repository.

## Roles and responsibilities of stakeholders

Key Stakeholders/Actors	Roles and Responsibilities
Department of Livestock (DoL)	<ul style="list-style-type: none"> <li>➤ Policy, advisory and financial support</li> <li>➤ Registration and licensing of private <i>Bjop-Khyi</i> breeders</li> <li>➤ Approve import/export of pure-line breeding stock</li> <li>➤ Liaise with International organizations for technical and financial support</li> </ul>
BAFRA	<ul style="list-style-type: none"> <li>➤ Issuance of import/export authorization for live animals</li> </ul>
National Biodiversity Centre	<ul style="list-style-type: none"> <li>➤ Genetic characterization and conservation of <i>Bjop-Khyi</i></li> </ul>
National Highland Research and Development Centre (NHRDC)	<ul style="list-style-type: none"> <li>➤ Serve as an apex body to coordinate and manage National Strategic Plan for Breeding of Bhutanese Mastiff</li> <li>➤ Coordinate to conduct research for breed improvement</li> <li>➤ Oversee the capacity development at the national and regional level</li> <li>➤ Provide specialized training in <i>Bjop-Khyi</i> breeding program</li> <li>➤ Monitor and evaluate <i>Bjop-Khyi</i> breeding program</li> <li>➤ Facilitate registration and licensing of private <i>Bjop-Khyi</i> breeders</li> <li>➤ Facilitate import/export of pure-line breeding stock</li> <li>➤ Develop national and international linkages</li> </ul>
National Mastiff Farm	<ul style="list-style-type: none"> <li>➤ Implement the strategic plan for <i>Bjop-Khyi</i> breeding and development</li> </ul>
National Veterinary Hospital	<ul style="list-style-type: none"> <li>➤ Liaise with NHRDC to support clinical services</li> <li>➤ facilitate pet registration system</li> </ul>

National Centre for animal health	<ul style="list-style-type: none"> <li>➤ Implement Dog Population management program</li> <li>➤ Support RLDCs and DVH in disease prevention and control program</li> </ul>
Regional Livestock Development Centre (RLDC)	<ul style="list-style-type: none"> <li>➤ Coordinate disease prevention and control program</li> <li>➤ Support implementation of DPM program</li> <li>➤ Coordinate disease screening in breeding stock</li> <li>➤ Coordinate monitoring and evaluation of <i>Bjop-Khyi</i> breeding program in the region</li> </ul>
Dzongkhag and Gewog Administration	<ul style="list-style-type: none"> <li>➤ Support implementation of participatory <i>Bjop-Khyi</i> breeding program</li> <li>➤ Implement disease prevention and control program</li> <li>➤ Support implementation of DPM program</li> <li>➤ Liaise with RLDC for all activities related to <i>Bjop-Khyi</i> development</li> <li>➤ Support monitoring and evaluation of <i>Bjop-Khyi</i> breeding program</li> </ul>
Highland community	<ul style="list-style-type: none"> <li>➤ Participate in the <i>Bjop-Khyi</i> breeding and other related programs</li> </ul>

## Action Plan for Implementation

Strategy	Activities	Time period	Lead	Collaboration	Resources
Strengthen genetic improvement of <i>Bjop-Khyi</i> through pure line and selective breeding approaches	Strengthen farm infrastructures at Mastiff Breeding farm, Gasa <ul style="list-style-type: none"> <li>- Play ground</li> <li>- Training ground</li> <li>- Kennel (additional)</li> <li>- Isolation kennel</li> </ul>	July 2021 – June 2022	NHRDC	MBF, Gasa	To be proposed
	Develop on-station <i>Bjop-Khyi</i> breeding & management, training SOPs, <i>Bjop-Khyi</i>	Jan – June 2021	NHRDC	MBF, RLDCs, NVH, NDRDC	Budget to be reappropriated from NHDP
	Develop web-based database and information system for <i>Bjop-Khyi</i>	July 2021 – June 2022	NHRDC		Budget to be reappropriated
	Procurement of pure-line <i>Bjop-Khyi</i> for on-station breeding	July - Dec 2021	NHRDC/DOL	DOL/BAFRA	Budget available
Encourage participatory breeding program among highland communities to increase <i>Bjop-Khyi</i> gene pool and sustain livelihood of highlanders	Identification of potential herders & private breeders for <i>Bjop-Khyi</i> breeding	July 2021 – June 2022	NHRDC	RLDCs/Dzongkhags	To be proposed
	Training and advocacy of selected herders & private breeders	July 2021 – June 2022	NHRDC	NVH/Dzongkhags/RLDCs	To be proposed
	Identification & selection of <i>Bjop-Khyi</i> females among herders (tagging of selected)	July 2021 – June 2022	MBF	NHRDC/Dzongkhags/RLDCs	Budget available
	Provide technical & support packages to herders	June 2022 – July 2023	NHRDC	MBF/DOL/Dzongkhags/RLDCs	To be proposed
	Supply of pure-line male <i>Bjop-Khyi</i> to selected herders & private breeders	July 2022 – June 2023	MBF	NHRDC/Dzongkhags	To be proposed

Enhance pure <i>Bjop-Khyi</i> population through control of stray dogs, feral dogs and <i>Bjop-Khyi</i> of low genetic merit.	Conduct mass sterilization program & removal of stray dogs, feral dogs and <i>Bjop-Khyi</i> of low genetic merit.	July 2021 – June 2022	NCAH/DPM	RLDCs/Dzongkhags/NHRDC	Budget available with DPM program
	Survey to measure effectiveness of mass sterilization program	Dec, 2021 – June 2022	NCAH/DPM	Dzongkhags/RLDCs	DPM Budget
Capacity building of technical staff	Provide hands on training to technical staff on <i>Bjop-Khyi</i> breeding and management.	Jan – June 2021	NHRDC	NVH/RLDCs/Dzongkhags	To be reappropriated
	Organize periodic exchange visits for technical staff within and outside country to enhance knowledge and skills.	July 2021 – June 2022	NHRDC	Relevant stakeholders	To be proposed
Institutional linkages	Develop institutional linkages for exchange of knowledge and expertise on <i>Bjop-Khyi</i> breeding, genetic evaluation and development.	Jan 2021 onwards	NHRDC	MBF/DOL	-
	Strengthen linkages for import and export of <i>Bjop-Khyi</i>	Jan 2021 onwards	NHRDC	MBF/DOL/relevant stakeholders	-
Research & innovation	Genetic characterization of <i>Bjop-Khyi</i> to register as a distinct breed for Bhutan	July 2021 – June 2022	MBF	NHRDC/NBC/RLDC/Dzongkhag	To be proposed
	Conduct need based research to generate relevant	July 2021 onwards	NHRDC	MBF/RLDC/Dzongkhag	To be proposed

	technologies for <i>Bjop-Khyi</i> breed improvement.				
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