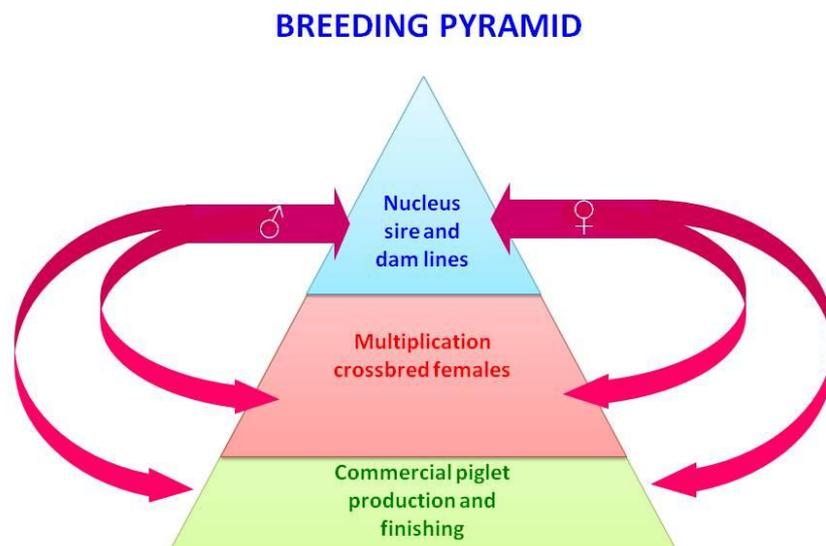


## National Guidelines for formulation of State Pig Breeding Policy

The National Guidelines for formulation of State Pig Breeding Policy of Department of Animal Husbandry, Dairying & Fisheries, Government of India will focus on outline of pig-breeding needs of the country, leaving flexibility to States to work upon as per their requirement within the frame-work.

### 1. Objectives:

1. Genetic improvement of local pigs through selective breeding
2. Conserve/maintain nucleus hard of well developed indigenous pig germplasm.
3. Genetic improvement of local/non-descript animals by crossbreeding and gradually replacing the non-descript animals with crossbred germplasm of desired level of exotic inheritance.
4. Maintenance of well-developed planned crossbred animals at farmers' field.
5. Expansion and strengthening of breeding infrastructure and support mechanism to propagate elite germplasm through Artificial Insemination (AI).
6. Holistic development of piggery sector *w.r.t.* breeding, feeding, management, housing, value addition and marketing. The target is to improve the integration and position of local farmers and entrepreneurs into a pig-production and marketing value chain.



## 2. Breeding Policy:

### 2.1. Recognition and Conservation of Indigenous Germplasm:

1. **Breed registration:** All the states will take necessary steps for breed registration of indigenous germplasm in collaboration with ICAR-NRC on Pig and ICAR-NBAGR, Karnal.
2. Nucleus breeding farm for such type of indigenous registered germplasm need to establish in its breeding tract separately. Breeding pyramid should be followed for indigenous prized germplasm also.
3. Prized animals may be collected from farmers' field/state/central Govt. farm to the nucleus herd.
4. Pedigreed animals should be propagated only to interested farmers who want to keep local germplasm.
5. No crossbreeding should be allowed to farmers' field for these prized animals.
6. Separate rates and incentive from the state department may be provided to such farmers.
7. Most of the indigenous germplasm are smaller in size with less litter performance. However, in specific cases, indigenous animals with higher litter size and body weight, if available, may be used for upgradation of non-descript animals with proper plan.

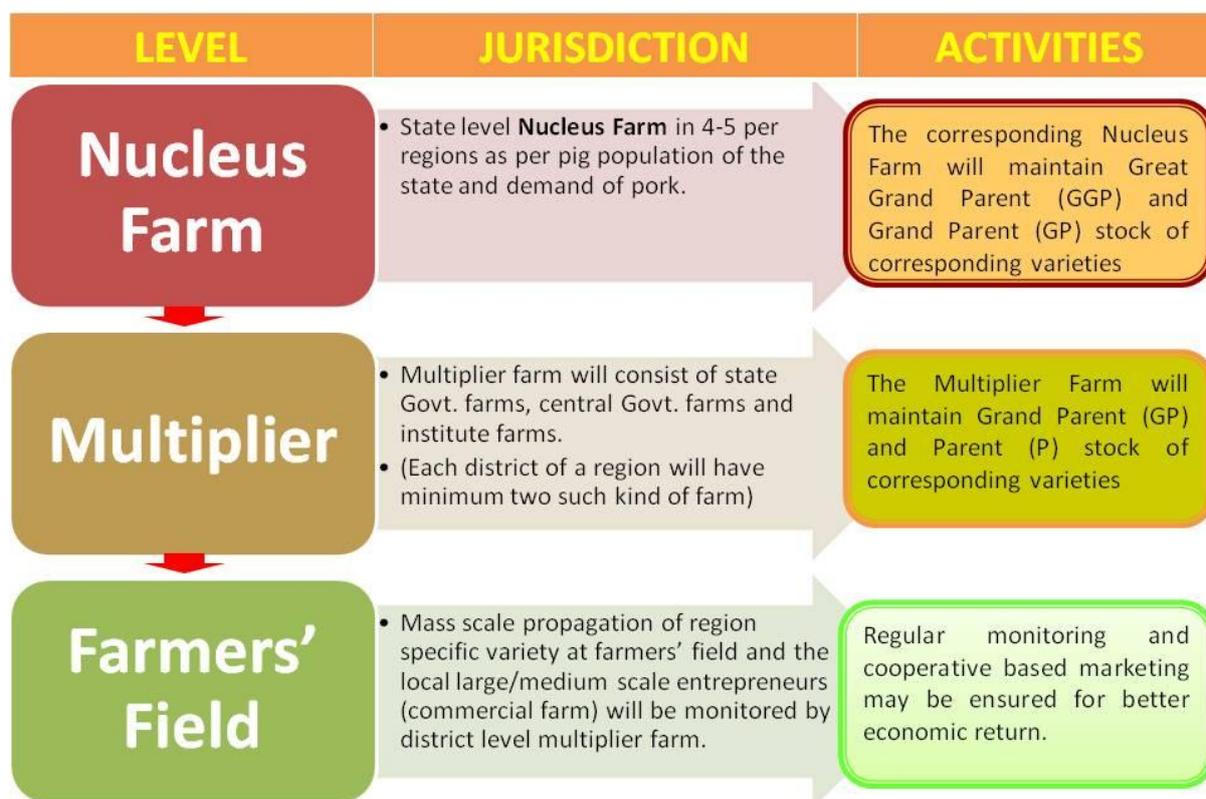
### 2.2. Cross Breeding:

#### - Crossbred to be propagated in different region:

- 
- |    |                    |   |
|----|--------------------|---|
| 1. | Northern India     | <ul style="list-style-type: none"><li>• Large White Yorkshire</li><li>• Large White Yorkshire cross</li><li>• Landrace cross</li></ul>  |
| 2. | Northeastern India | <ul style="list-style-type: none"><li>• Hampshire cross</li><li>• Large white Yorkshire specifically for Mizoram and Tripura</li><li>• Triple cross with Duroc as terminal sire</li><li>• Large Black cross</li></ul> |
| 3. | Eastern India      | <ul style="list-style-type: none"><li>• Hampshire cross</li><li>• Tamworth cross (specifically Jharkhand)</li></ul>   |
-

4.	Central India	<ul style="list-style-type: none"> <li>• Landrace cross</li> <li>• Large white Yorkshire cross</li> </ul>
5.	Southern India	<ul style="list-style-type: none"> <li>• Large white Yorkshire cross</li> <li>• Triple cross with Duroc as terminal sire</li> </ul>
6.	Western India	<ul style="list-style-type: none"> <li>• Large white Yorkshire cross</li> </ul>

## BREEDING POLICY (crossbreeding)



**Schematic diagram for pig breeding programme in different States**

### 2.3 Breeding with Exotic Germplasm:

1. Import of exotic germplasm, specifically, Hampshire, Large White Yorkshire, Duroc, Landrace and Large Black from reputed source after all bio-security checking. Preference may be given to the first three breeds for import.
2. Import may be done for live animal instead of frozen semen, as the success rate of frozen semen is very low.
3. Developed breed-specific nucleus herd of imported germplasm for subsequent use in crossbreeding programme.

### **3. Breeding plan:**

#### **3.1 Nucleus Farm:**

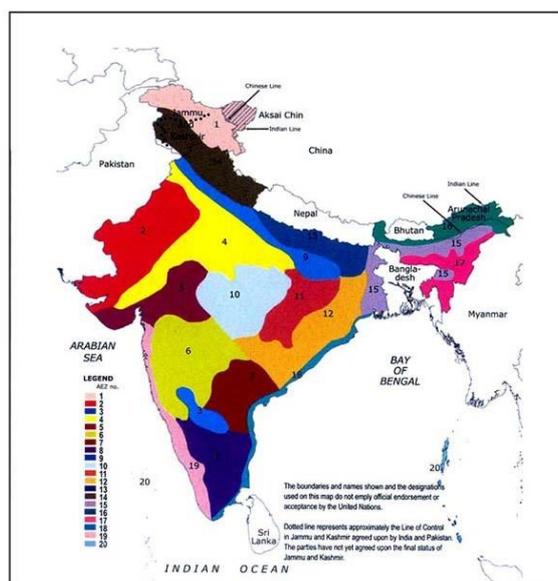
1. Nucleus farm may be of pure exotic breed, well-developed crossbred or pure indigenous breed.
2. Crossbred animals of desired level of exotic inheritance should be maintained. Crossbreeding may be restricted to 50% level of exotic inheritance. However, the level of exotic inheritance may be increased in state-specific breeding programme. In case of nucleus herd of pure animals, mixing/crossing of germplasm must be restricted.
3. Minimum 30 breedable sows unit should be maintained with a sex ratio of 1:3 and thus 10 sires (2 sires from each 5 unrelated sire lines) need to be maintained by each of the unit.
4. Selection of male animals should be based on weaning weight (best 25%) and 8 month body weight (best 5%), based on two stage sequential selection. Selection of female animals should be based on dam's litter size at birth (>7) and weaning weight (best 25%) and number of functional teats (at least 6 pairs of functional teats). However, these can be changed as per performance of local crossbred animals.
5. Centralized data recording system may be initiated. Generation wise genetic evaluation may be carried out to estimate the response to selection. The overall genetic gain due to selection, selection differential and heritability may also be calculated.
6. Inbreeding should be avoided. Replacement of boars need to be done at regular interval of 2 years of productive herd life. Sire exchange programme among the farms will also be helpful to reduce the inbreeding effect. Culled male animals should be castrated before selling to avoid indiscriminate breeding.
7. Three number of farrowing per sow need to be recorded. Three farrowing per sow should be completed in 2 years.
8. Weightage of selection need to be given on litter size and weight at birth and weaning.
9. Besides routine productive, reproductive, adaptive and carcass traits lifetime production traits may also be recorded.

#### **3.2 Multiplier and Farmers' Farm:**

1. Multiplier farm should maintain grand parent (GP) and parent (P) stock of desired variety. The replacement (GP and P) stock of multiplier farm should be made

available from nucleus farm. Multiplier farm should produce desired animals for propagation to farmers' field.

2. Breeding plan for farmers' field should be separate with that of nucleus and multiplier farm. They are only to make *inter-se-mating* among the developed crossbred animals. No indiscriminate crossbreeding is allowed at farmers' field.



Agro-climatic zone of India

(Source: [http://www.nih.ernet.in/rbis/india\\_information/ecological%20regions.htm](http://www.nih.ernet.in/rbis/india_information/ecological%20regions.htm))

### 3.3 Mating system:

All the breeding propagation activity should preferably follow Artificial Insemination (AI) practice. To achieve the target the State level Multiplier farm must have a training center for the local farmers including modest facility/laboratory for semen collection, evaluation and preservation. However, natural mating in some cases may also be adopted based on infrastructure of different states. Selection of boars in breeding programme should be based on following points:

1. The breeding boars require a recorded pedigree, a quality certificate for the breed issued by the authority for boars used for AI/natural mating.
2. The boars used for AI must be quarterly performance tested for semen quality.
3. The minimum area for keeping a breeding boar is 5 m<sup>2</sup> for the local breed and 6 m<sup>2</sup> for the exotic breed.

4. The maximum frequency of use of boars is 2 times a week for AI boars younger than two years, 3 times a week for AI boars older than 2 years, and 3 times a week for natural mating boars.
5. The earliest age of use for AI or natural mating is 8 months for local boars and 10 months for exotic boars.
6. AI boars should not be used for more than 3.5 years, and natural mating boars for not more than 3 years.
7. The reports on the quality of these boars shall be annually sent to DADF for evaluation.
8. Boars needs to be vaccinated against swine fever, pasteurellosis, foot and mouth disease and other diseases as regulated.
9. A certification system should be implemented step by step for better quality breeding boars and sows for organized farms which can be recognized as certified breeding animals

### **3.4 Culling:**

Bad/ unproductive animals should be eliminated from each generation. Animals along with its family with specific genetic disorders should be eliminated from the breeding programme.

### **3.5 Traceability and disease control:**

A systematic process of identification, registration and recording of animals should be followed to keep track of the individual animals. Specific system should develop for pig disease surveillance and monitoring.

### **3.5 Capacity building:**

1. Training of farm managers/large scale entrepreneurs on breeding management
2. Regular/refresher training for technical personnel, para-vets and livestock service provider
3. Training on semen collection and AI to farmers/service provider

### **3.6 Infrastructure building:**

1. Provision may be kept for import/purchase of advanced machinery for feeding and watering.

2. Development/provision of infrastructure at farmers' field for climate resilient housing for pigs.
3. Establishment of a bacon factory in the State would reduce the transportation cost by rail and boost piggery in the State.
4. Value addition of pork and pork-products should be promoted for better profitability of the farmers.
5. Cooperative based market chain should be developed.
6. All the states should develop specific quarantine facilities for import of animals.

### **3.7 Subsidies and other financial support**

1. Easy bank credit facility
2. One time subsidy for smallholders purchasing breeding boars
3. Annual subsidies for using AI services
4. One time subsidy for AI service providers
5. One time subsidy for waste management system
6. Subsidies for the import of GP and PS stocks
7. Price subsidies for indigenous pork producers
8. Subsidies for infrastructure development
9. Tax holiday for specific period for large scale commercial pig farms

### **4. Development of state specific policy and Implementation**

The states having significant effect of piggery in livelihood of the population should work upon as per their requirement within the frame-work of this policy considering following facts:

- i) Involvement of cultural and social system of the state.
- ii) Sectoral analysis of pig rearers of the states need to be done for formulation of specific policy with zero input, low input and intensive pig farming system.
- iii) Formulation of state-specific breeding plan should target the defined single or multiple objectives/breeding goal as mentioned in para 1.
- iv) Tentative time span for achieving the breeding objective need to be fixed based on socio-cultural status of the states.
- v) State may target to encourage the entrepreneurs and private/ commercial pig farmers.
- vi) Policies for development of state specific organic pig farms may be taken up.

- vii) State Pig Breeding Policy will be mandatory for importing States before submission of any proposal for import of exotic breeds of pigs
- viii) The Policy should target to improve the integration and position of local farmers and entrepreneurs into a pig-production and marketing value chain.