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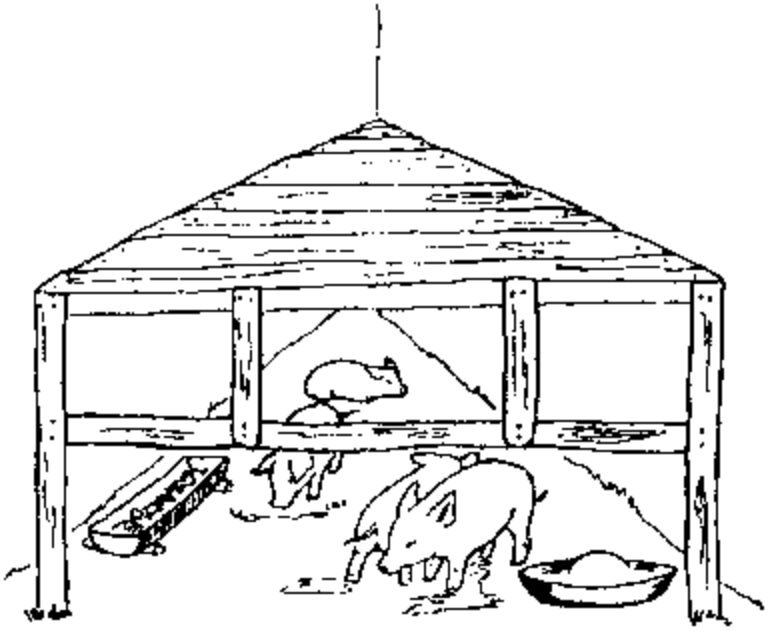
HOUSE MODULE AND MANAGEMENT FOR

PIG REARING

Written by
Dr. Bijoy K. Choudhury and
Monuhar Pegu

Designed by
Nemani Chandrasekhar,
WASSAN



HOUSING MODULE AND MANAGEMENT FOR PIG REARING

1. SITE SELECTION

A suitable site for pig housing should be slightly elevated to prevent water logging during heavy rains. The area must have good natural drainage, moderate shade, and protection from strong winds. It is also important to maintain a minimum distance of 10–15 meters from household areas to minimize odour and maintain hygienic living conditions for both humans and animals.

2. FLOOR DESIGN (CONCRETE BASE)

A concrete floor is recommended as it supports hygiene, easy cleaning, and disease control. The floor should have a slight slope of 1:40 to allow water and waste to drain away efficiently. A drainage channel along one side of the shed helps ensure proper waste removal. The floor should be finished with a rough texture to prevent animals from slipping.

3. HOUSING STRUCTURE

The structure should be built using materials commonly available in villages such as bamboo poles, timber or wooden posts, local thatch, CGI sheets or tarpaulin for roofing, split bamboo for side fencing, stones for the foundation edging, and basic items like nails, binding wire and rope.

For the foundation, stones or bricks are used to line the perimeter, and the concrete floor is poured inside this boundary. The walls are generally made from split bamboo or wooden planks up to a height of 3–4 feet, which provides ventilation and keeps construction costs low. The upper portion of the wall may be left open or covered using bamboo mesh. Roofing is typically done with CGI sheets for durability, and the

recommended roof height is between 6 to 8 feet with an appropriate slope for rainwater runoff.

4. SPACE REQUIREMENTS

Each adult pig requires 1.2 to 1.5 square metres of floor area, while a sow with piglets needs 2.5 to 3 square metres. A boar should be provided around 2.5 square metres of space, and growers need about 0.8 to 1 square metre per pig. Separate pens should be created for sows with piglets, growers, boars and sick or isolated animals to ensure proper management and reduce stress among animals.

5. PEN FEATURES

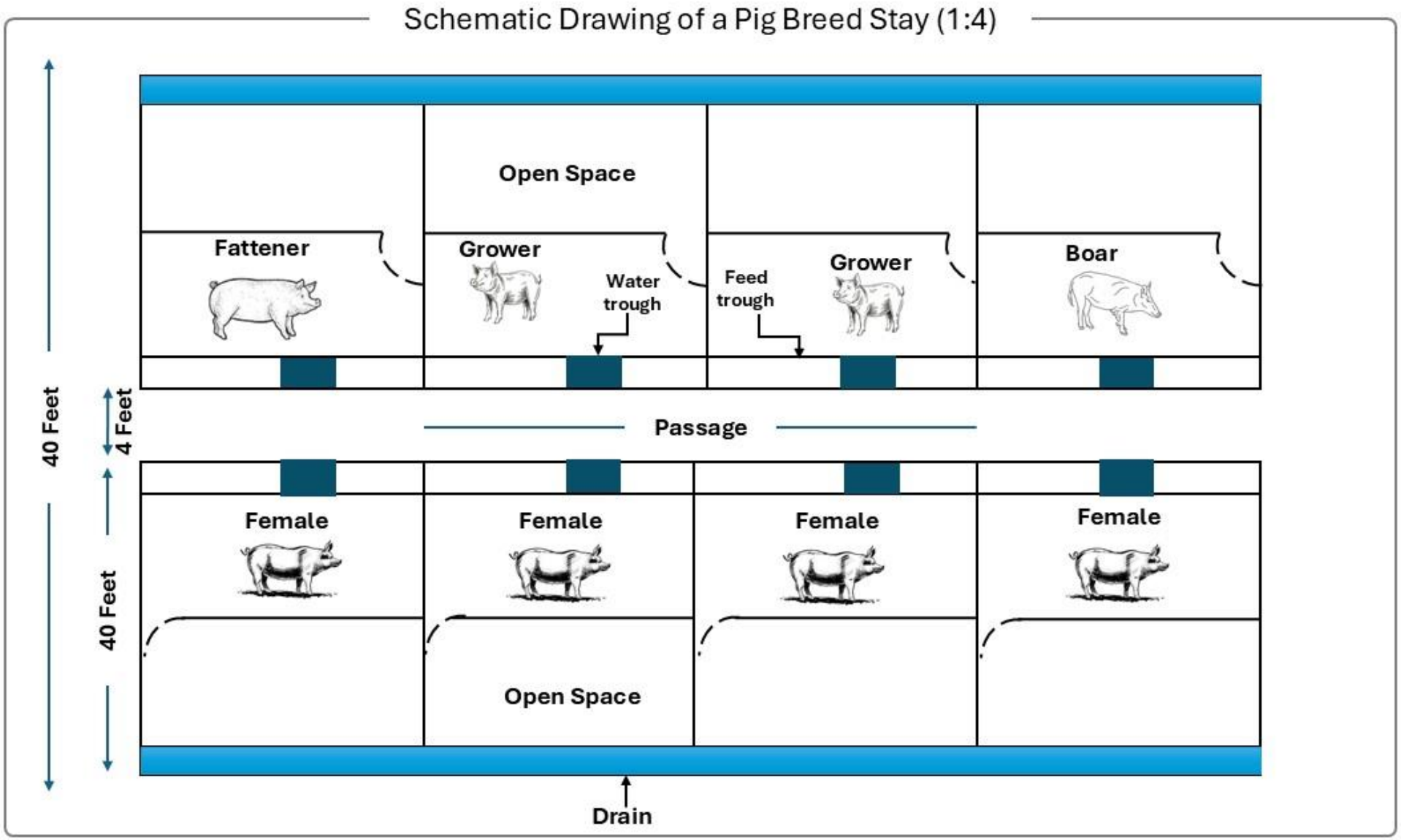
The feeding area should include a concrete feeding trough placed along the wall, and a separate trough must be provided for water, ensuring clean drinking water is available at all times. Ventilation is provided naturally through bamboo side walls, and fully closed walls should be avoided as pigs require adequate airflow. Bedding material such as dry straw, banana leaves, or sawdust should be placed in the resting area to enhance comfort and replace it every week. For waste management, the sloped concrete floor along with the drain allows easy washing of the pen. Waste should be collected in a pit located on the lower side of the shed and composted with rice husk or leaves to produce organic fertilizer.

6. BIO-SECURITY & HYGIENE

A footbath containing disinfectants should be kept at the entrance to reduce the risk of disease entering the shed. Pens must be cleaned regularly, either daily or on alternate days, to maintain hygiene. The surrounding area should be kept dry and free from weeds. Any sick animal should be isolated immediately to prevent the spread of diseases.

7. COST MINIMISATION THROUGH LOCAL MATERIALS

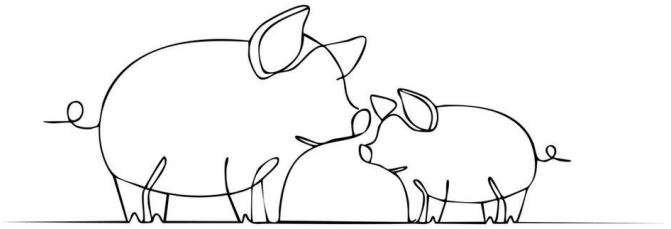
To reduce construction costs, bamboo can be used for around 60–70 percent of the structure. Timber and bamboo can be combined to create strong yet economical frames. Locally available thatch can be used instead of CGI sheets if budget is limited. Local masons may be hired specifically for concrete flooring work, which requires technical skill.


Schematic Drawing of a Pig Breed Stay (1:4)
Open Space
Fattener
Grower
Water trough
Feed trough
Grower
Boar
40 Feet
4 Feet
Passage
Female
Female
Female
Female
40 Feet
Open Space
Drain

PIGGERY BREEDING UNIT (1:4) FOR ASSAM & MEGHALAYA

(LOW-COST HOUSING)

1. INTRODUCTION



Pig farming is an important livelihood activity in Assam and Meghalaya, particularly for small and marginal households. Indigenous and locally adapted pig breeds perform well under low-input systems and provide regular income, manure for crops, and nutritional security. This project proposes a low-cost household piggery unit with a 1:4 breeding ratio (1 boar:4 sows), designed to suit high-rainfall, humid conditions and resource-poor farmers.

2. OBJECTIVES OF THE PROJECT

- To establish a low-cost, climate-suitable piggery unit at household level
- To ensure regular income through piglet production and/or fattening
- To promote use of local materials and reduce capital investment
- To integrate piggery with household farming through manure recycling

3. PROJECT SCALE AND UNIT DESCRIPTION

- **Unit size:** 1 breeding boar + 4 breeding sows (1:4)
- **Production system:** Semi-intensive / intensive
- **Target beneficiaries:** Small & marginal farmers, SHGs, tribal households
- **Breed type:** Indigenous or improved local crosses (e.g., Niang Megha, Ghungroo, Hampshire cross)

4. SITE SELECTION AND LAYOUT

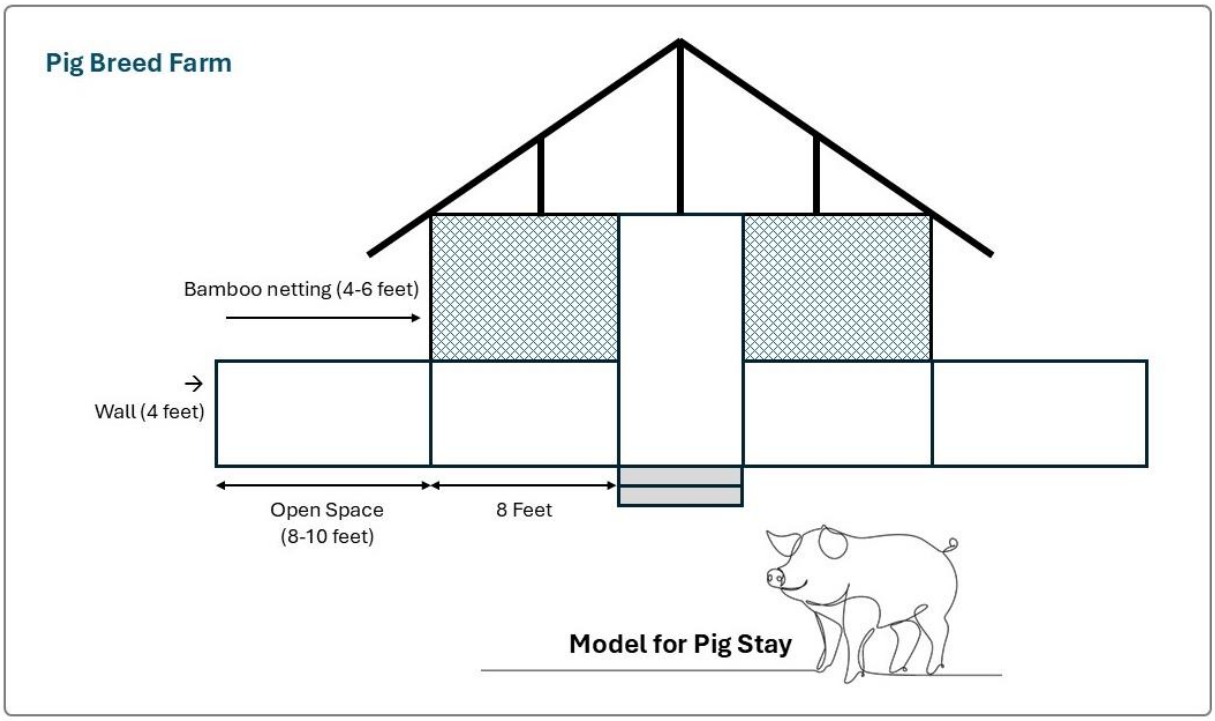
- Slightly elevated site to prevent waterlogging
- Good drainage and easy access to water and feed
- Away from household water sources but close enough for daily management
- Orientation to allow cross-ventilation

HOUSING COMPONENTS:

- 1 boar pen
- 4 sow pens (one adaptable as farrowing pen)
- 1 weaner pen

- 1 grower/fattener pen
- Feed store and working passage
- Drainage channel and dung/compost pit

  Total covered area: approximately 55–65 m²



5. HOUSING DESIGN AND CONSTRUCTION (LOW-COST MODEL)

- **Plinth:** Raised 20–30 cm above ground using brick/stone
- **Floor:** Cement concrete with slope for drainage
- **Walls & partitions:** Bamboo/wood with mud or cement plaster
- **Roof:** GI sheet preferred (thatch optional for lower cost)
- **Ventilation:** Open sides with overhang; protection from rain
- **Farrowing arrangement:** Simple guard rails and piglet creep area

6. SPACE REQUIREMENT (INDICATIVE)

- Boar pen: 6–8 m²
- Sow pen (each): 2–2.5 m² covered
- Farrowing area (temporary): 2.5–3.5 m²
- Weaner pen: 4–6 m²
- Grower/fattener pen: 8–10 m²

7. FEEDING AND WATER MANAGEMENT

- Clean drinking water through troughs or nipples
- Feeding based on locally available resources:
  - Rice bran, maize, broken rice
  - Kitchen waste (properly cooked)
  - Green fodder and crop residues
  - Concentrate feed and mineral mixture for breeders

8. HEALTH CARE AND BIOSECURITY

- Regular vaccination and deworming
- Footbath at entrance
- Clean pens and regular disinfection
- Quarantine for newly purchased animals

9. MANURE AND WASTE MANAGEMENT

- Floor drainage into dung pit
- Composting of pig manure for crop use
- Reduced fly breeding and better sanitation

10. Cost of the Project (Indicative)

A. Housing Cost

• Site leveling & earthwork	:	₹3,000 – ₹5,000
• Cement flooring & drainage	:	₹10,000 – ₹14,000
• Superstructure (bamboo/wood)	:	₹10,000 – ₹15,000
• Roofing (GI sheet/thatch)	:	₹12,000 – ₹18,000
• Dung pit & drainage	:	₹3,000 – ₹4,000
Housing Subtotal	**:**	**₹38,000 – ₹56,000**

B. Equipment & Infrastructure

• Feeders and water troughs	:	₹3,000 – ₹5,000
• Footbath, tools, disinfectants	:	₹2,000 – ₹4,000
Equipment Subtotal	**:**	**₹5,000 – ₹9,000**

C. Breeding Stock

• 1 Boar	:	₹8,000 – ₹12,000
• 4 Sows	:	₹28,000 – ₹36,000
Animal Cost Subtotal	**:**	**₹36,000 – ₹48,000**

D. Initial Feed & Health (2–3 months)

- Feed and supplements (LS) : ₹9,000 – ₹14,000
- Vaccination & veterinary care : ₹2,000 – ₹3,000

Feed & Health Subtotal : ₹11,000 – ₹17,000

11. TOTAL PROJECT COST

- Without animals : ₹54,000 – ₹82,000
- With animals (complete unit) : ₹90,000 – ₹1,30,000

12. EXPECTED PRODUCTION AND RETURNS

- 4 sows × ~2 litters/year
- Average 5–10 piglets per litter
- 20–40 piglets/year
- Income through piglet sale or fattening
- Housing cost usually recovered within 1–2 years under good management

13. SUSTAINABILITY AND ADVANTAGES

- Low capital investment
- Suitable for high rainfall areas
- Utilization of local materials and family labour
- Manure recycling supports crop production

14. CONVERGENCE WITH DEPARTMENT

Regular mass vaccination drives, healthcare camps and extension support should be conducted in coordination with the respective A.H & Veterinary Department to improve prevention control and treatment against various diseases. Guiding farmers to access govt. schemes and subsidies for establishing or upgrading their farms.

15. COMMUNITY ANIMAL HEALTH WORKERS

Youth/woman maybe selected from the locality and given basic systematic training in Animal Husbandry and Veterinary Dept. They can offer first aid, administer vaccinations, conduct de-worming, provide nutritional advice and can help/strengthen the farming system.

COMPOSITION OF STARTER, GROWER AND FINISHER FEED (100 KG)

Ingredients	Starter (5-15 kg b. wt.)	Grower (15-45 kg b. wt.)	Finisher (45-90 kg b. wt.)
Crushed maize	55	50	45
Wheat bran	10	18	25
Molasses	5	5	5
Fish Meal	8.5	5	3
Groundnut Cake (GNC)	20	20	20
Mineral Mixture	1	1.5	1.5
Common Salt	0.5	0.5	0.5
Vitamin A, B, D	25 gm	20 gm	15 gm

Replacement of some of feed ingredients can be made as follows:

- **Maize –** Can be replaced by broken rice, wheat, sorghum, barley
- **Groundnut Cake –** Can be replaced by linseed cake, sesame cane, soyabean
- **Fish Meal –** Can be replaced by skin milk powder

BALANCED PIG FEED PREAPRATION USING LOCAL INGREDIENTS

This package is designed for smallholder farmers who rely on locally available, low-cost materials, while ensuring that pigs receive adequate energy, protein, vitamins, and minerals necessary for healthy growth. It is also based on farmers' locally available resources and indigenous feed management practices.

1. LOCALLY AVAILABLE INGREDIENTS

Villages commonly have access to several energy sources, protein, fibre, vitamin, and mineral sources suitable for pig feed. Energy sources include cooked rice, broken rice, crushed maize, tapioca or cassava, sweet potato, banana or banana stem, pumpkin, colocasia (taro), millet, and by-products such as rice bran and wheat bran. Protein sources normally accessible to farmers include fish meals or dried small fish, soybean meals or roasted soybeans, groundnut cake and mustard oil cake.

For fibre and vitamins, farmers can use fresh green forage such as banana leaves, sweet potato vines, colocasia leaves, and legume leaves including cowpea, berseem and subabul. Essential minerals can be supplied through mineral mixture, common salt and crushed eggshell or limestone powder. These ingredients collectively help farmers prepare balanced food, using materials readily available at household or community level.

2. LOCALLY AVAILABLE FEED INGREDIENTS:

Materials	Details of Use and Properties
Rice Bran	• Contains about 11% Protein • Can be mixed with other feed up to 30-40%
Broken Rice	• Contains about 8% Protein • Can be mixed up to 15-20%
Maize	• Contains about 65% Carbohydrate and 9% Protein • Can be mixed up to 40%
Soyabean	• Contains about 38% Protein • Can be mixed 20% • (after dried, milled or cooked & mixed with other feed staff)
Wheat bran	Contains • Protein 14-16% • Fat max. 9.5% • Crude fiber 8-10% • Carbohydrate up to 25%
Root Crops	• Can be mixed up to 10-20% • (Slice & dried and Ground before use)
Fruits	• Use by boiling & mixing with rice bran/broken rice etc. • (Banana, Papaya, Melons etc.)
Vegetables	• As supplementary feed 5% mixing with other feed – like Cabage, lettuce, Spinach, sweet potato, beans, Colocasia (Boiled), pumpkins etc.
Green Soyabean plant	• Vegetables protein Source
Colocasia, Pandalu	• Stem, leaves can be used after cooking as vegetable protein
Chayote	• Rice in amino acid/vit E / Potassium / Cal. etc.
Banana Stem	• Use after chopped and cooked
Pumpkin	• Vit B. group after boiling
Bottle gourd	• High nutrient value

3. IMPORTANT FEEDING TIPS

Cooking ingredients improve digestibility, so rice, cassava, sweet potato and taro should be cooked before feeding, and grains may be soaked overnight to soften them. Mineral mixture must be added at about 2 percent, along with 0.5 percent salt to support bone development and general health. Fresh green fodder should form about 10–20 percent of the daily feed, and farmers must avoid feeding spoiled or mouldy ingredients. Clean water should be available at all times.

4. RECOMMENDED FEEDING QUANTITY

Piglets require between 300 and 500 grams of feed daily, growers need 1.5 to 2.5 kilograms, finishers consume 2.5 to 3.5 kilograms and pregnant sows need 2 to 3 kilograms. Lactating sows require the highest quantity, generally 3 to 4.5 kilograms per day. These quantities should be adjusted according to body weight and local availability of feed.

5. COST-REDUCING LOCAL SUPPLEMENTS

Feed costs can be reduced significantly by incorporating local supplements such as azolla (up to 15 percent of the diet), sweet potato vines, chopped banana stems, kitchen vegetable waste and colocasia leaves (boiled to remove oxalates). Using these materials can reduce total feed cost by 30–40 percent.

Note: *Each feed ingredient should be selected based on locally available resources, prevailing farming practices, cropping systems, and seasonal availability. Farmers are encouraged to use ingredients that are easily accessible in their area and best suited to their local conditions*

8. CONCLUSION

The proposed 1:4 low-cost household piggery unit is economically viable, environmentally suitable, and socially acceptable for Assam and Meghalaya. With proper management, health care, and feeding, this model can significantly enhance household income and livelihood security.

9. REFERENCES

Sketch of pig stay taken from the web site of Directorate of Animal Husbandry and Veterinary, Assam https://veterinary.assam.gov.in (Pig Farming)

How to Farm Pig – Feeding/The Pigsite www.Thepigsite.com

PIGGERY BREEDING UNIT (1:2)

1. **PROJECT SCALE AND UNIT DESCRIPTION**
   - Unit size- 1 breeding boar + 2 breeding sows (1:2)
   - Production system- intensive/semi-intensive
   - Breed type- improve local crosses (Niang Megha, Ghungroo, Hampshire cross)
2. **HOUSING COMPONENTS**
   - 1 boar pen
   - 2 sow pen
   - 1 weaner pen
   - 1 grower/fattener pen
   - Feed store and working passage
   - Drainage channel and dung/compost pit

COST OF PROJECT (1:2)

A. HOUSING COST

• Site leveling and earthwork	:	₹ 2,000 - ₹ 3,000
• Flooring and drainage	:	₹ 8,000 - ₹ 12,000
• Super structure	:	₹ 8,000 - ₹ 14,000
• Roofing (GI sheet/thatched)	:	₹ 8,000 - ₹12,000
• Dung pit and drainage	:	₹ 2,000 - ₹ 4,000
• **Housing subtotal**	**:**	**₹28,000 - ₹ 45,000**

B. EQUIPMENT AND INFRASTRUCTURE

• Feeder and water trough	:	₹ 3,000 - ₹ 5,000
• Footbath, tools, disinfectants	:	₹ 2,000 - ₹ 4,000
• **Equipment subtotal**	**:**	**₹ 5,000 - ₹ 9,000**

C. BREEDING STOCK

• 1 boar	:	₹ 8,000 - ₹ 10,000
• 2 sows	:	₹ 14,000 - ₹ 18,000
• **Animal cost subtotal**	**:**	**₹ 22,000 - ₹ 28,000**

D. FEED AND HEALTH (2-3 MONTHS)

• Feed and supplements	:	₹ 4,000 - ₹ 6,000
• Vaccination & Veterinary care	:	₹ 1,000 - ₹ 2,000
• Feed and Health subtotal	:	₹ 5,000 - ₹ 8,000
• **Total project cost**	**:**	**₹ 60,000 - ₹ 90,000**

For further information regarding this module, please contact:

Dr. Bijoy K. Choudhury (bijoy51714@gmail.com) and Mr. Monuhar Pegu (monuhar@wassan.org)