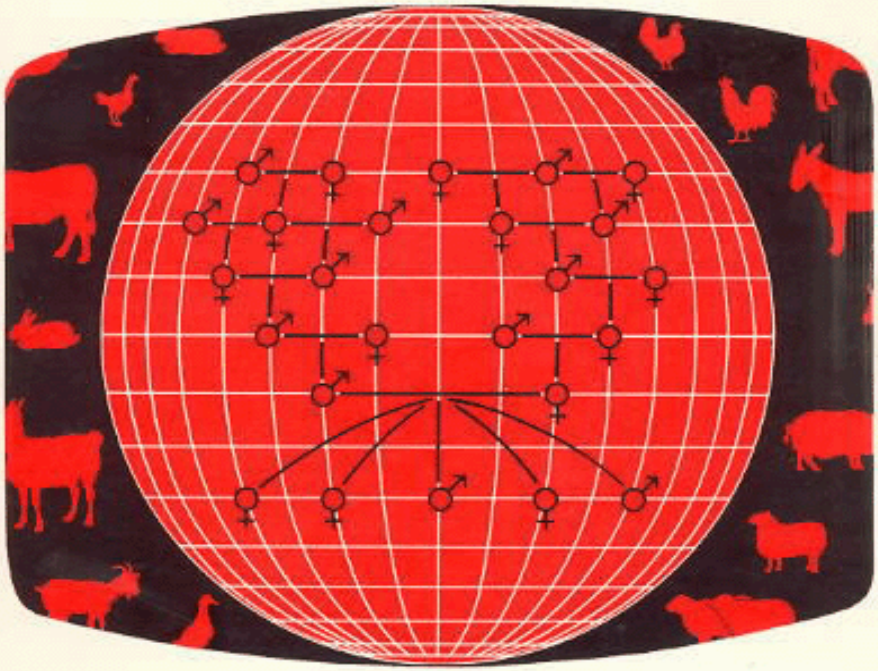
Animal genetic resources data banks

2. Descriptor lists for cattle, buffalo, pigs, sheep and goats



FAO ANIMAL PRODUCTION AND HEALTH PAPER

59/2

FOOD AND AGRICULTURE ORGANIZATION OF THE

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Animal genetic resources data banks

2. Descriptor lists for cattle, buffalo, pigs, sheep and goats

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 1986

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FOREWORD

This volume is one of a series of three which together present the FAO/UNEP recommended methodology on animal genetic resources data banks. The three volumes are as follows:

1. Computer systems study
2. Descriptor lists for cattle, buffalo, pigs, sheep and goats
3. Descriptor lists for poultry.

Volumes 2 and 3 each include instructions on how to use the Descriptor Lists and how to prepare data for entry.

The material in these three volumes derives from the Trials held by FAO/UNEP in Africa, Asia and Latin America in the period 1983-85. In Africa individual scientists in both anglophone and francophone countries were involved in defining descriptors suitable for each species. In Asia and Latin America several countries carried out national projects to extract data from their own original source documents, to create descriptors, and also to enter the data into a computer system. These countries were Malaysia, Mexico, Sri Lanka, Thailand and Venezuela. From their experiences it was possible also to define the personnel needed for the work and to calculate the time needed. A study of suitable computer systems was also undertaken using the experiences in each country, and cost estimates made for the establishment of regional data banks. These are in Volume 1.

In each region planning/evaluation meetings of all the involved personnel were held. The recommendations of these regional meetings were then appraised by an Expert Consultation held by FAO/UNEP in Rome in June 1985. At that time the experts recommended the publication of the results of the Trials as the Recommended FAO/UNEP Methodology for Animal Genetic Resources Data Banks.

Not only did the Trials make it possible to design, test and cost a method of operating regional data banks, but they also showed clearly the need for such banks as a tool for all those concerned with animal production, especially those concerned with the formulation of development projects which include components of animal breeding and genetics. It was discovered that there is a great wealth of data in source documents in developing countries which describes the experiences with different breeds of animals and their production and reproduction potentials. However, only 25-30 percent of this information is accessible to potential users, either in the country or elsewhere, for it is largely unpublished or is published in languages or journals not routinely scanned by the international abstracting organizations. This represents a great loss of valuable information and undoubtedly leads to the repetition of costly mistakes in project formulation, extension and development programmes as well as the duplication of effort in new research. The creation of a regional data bank in each of the four regions Africa, Asia, Near East and Latin America and the Caribbean was recommended by the experts, in order to serve the countries in those regions. In view of the increasing movement of animals and germplasm from one environment to another with all the hazards to their survival and productivity which are posed by more hostile climate, disease and feed resources, it is essential that genetic characterizations of the breeds and established crosses and of the environments to which they are adapted or not adapted should be available.

EXTRACTION AND PREPARATION OF DATA

1. INTRODUCTION

This chapter gives guidelines for extracting data on breed characteristics and for assembling them in an appropriate fashion for subsequent compilation into the approved Descriptor List. The person preparing data (compiler) is reminded of the role of the Data Bank (DB) and urged to keep in mind its value as a pool of information on breed characteristics within defined environments. The compiler should also keep in mind the needs of users for information relevant to the future utilization of animal genetic resources in other similar or dissimilar environments. Thus, this exercise of data extraction and presentation must include an exhaustive search of the published literature and other unpublished data sources, the evaluation of these sources and the extraction of valid genetic and associated environmental information and preparation of this information in a form suitable for entry into the Descriptor Lists.

2. WHERE TO FIND THE DATA

The data for the Data Bank will be derived from various published or unpublished sources. A Source is defined here as any document having authentic data which would add to the sum of knowledge about the genetic characteristics of a breed. The Source could have been written in any language. The likely types of Sources are listed below.

i. published scientific papers,
ii. papers presented in conferences with or without proceedings,
iii. specific reports or case studies,
iv. annual reports (livestock stations, research centres, government departments),
v. theses, graduate and undergraduate, and
vi. vi) stores of unpublished data ('idle' data).

The Data Bank does not include individual animal records but performance statistics of groups of animals of known breed type and conditions under which these statistics were measured. They should be entered in English, using the Descriptor lists in this publication. Similar Descriptor Lists in French and Spanish are available.

3. THE WORKING GROUP

All the persons involved should understand the background objectives and the basic principles of data handling. The team leader must have the following qualifications:

i. should be an animal geneticist by training, and should also have professional experience with the species being studied,
ii. have a good general knowledge of animal production,
iii. have the ability selectively to extract relevant information and be able to judge the authenticity of the source material.
iv. have some appreciation of statistics and computerization.

The assisting members of the team should preferably have a degree in Animal Science, Veterinary Science or Biological Sciences. Non professional members could assist in restricted areas such as compilation of data on rainfall, environmental temperatures etc. for various stations covered by the Sources. It is emphasised that the team leader be closely involved in training the team members and at all stages of the data extraction.

4. A NOTE OF CAUTION TO COMPILERS

The Descriptor List is comprehensive, covering all aspects of the breed characteristics and almost all classes of livestock. It was derived from trials in different countries in Africa, Asia and Latin America, and covers all possible traits of interest and occurence. As a result it is massive. It is therefore emphasized here that the compiler should study the general pattern and contents of the Descriptor List first. Then the mode of execution is to look and search from each source, data on genetic characterization. It is not to look at the Descriptor List each time and search for corresponding data from the source. From past experience, each source is likely to provide data for only 5 to 40 percent of the options listed in the Descriptor List.

The Descriptor List should serve as a dictionary of genetic characteristics and should be used as a format for layout of the Source Data Sheet prepared by the compiler before entering them into the system (see item 10 of these guidelines).

5. GENERAL LAYOUT OF DESCRIPTOR LIST

The Descriptor List is divided into two components.

Master Record. This record refers to physical characteristics of the breed within the species. Descriptive features have been categorised and may require the compiler to make decisions. For instance, in the case of hump size (large or medium or small) or proportion of a colour. Each species will have one Master Record for each of its breeds or strains. This record for the strain need not necessarily be derived from a single Source, but from a number of Sources and may also include additional information supplied by the compiler himself. This will allow the compiled Master Record to consist of one complete set of information on the physical characteristics of the strain.

Slave Record. This consists of performance characteristics of a group of animals of a breed or strain within a species. It also contains provisions for entering environmental characteristics if such details are given in the Source. Every Source will result in one Slave Record. But if the Source has performance characteristics of more than one breed, than this Source will provide one Slave Record for each breed; in this case environmental details are repeated for each of these Slave Records, unless of course the breeds were raised differently. In exceptional circumstances, an author may have published two or more papers covering different traits in each paper but all derived from the same group of animals maintained over the same time period. The information from these sources could be pooled into a single Slave Record. If these papers compared several breeds, then, the resulting number of Slave Records will correspond to the total number of breeds in all these papers.

After a complete exercise, the end result is one Master Record for each breed or crossbred and a larger number of Slave Records for each breed or crossbred. Each Slave Record derives from one Source, (or from several only in exceptional circumstances when several Sources report on the same animals). On the other hand, each Source contributes a Slave Record for each breed or crossbred type reported.

6. PROCEDURE FOR MASTER RECORDS

The Master Record is made up of breed descriptive data and is qualitative in nature. Attempts have been made in the Descriptor Lists to categorise descriptors such as body colours, horn shape and size, temperament and belly shape into fixed format alternatives (e.g. straight vs. curved; short, medium or long and colour percent). Compilers need to be consistent in their subjective evaluations. For other traits, for example, resistance to diseases and parasites, format free fields for word description are allowed. It is requested that such descriptions need to be precise and short.

Usually very few publications are available which describe the physical features of a breed. Therefore, the Master Record in spite of the lack of published data, should be completed as far as possible with added information based on personal experiences. Visual examination of the animals should be necessary to reduce unfilled gaps in the record.

As some of the data in the Master Record are subjective measures, it is recommended that all Master Records for a group of breeds or crosses be completed within an uninterrupted period of time so as to ensure uniformity.

Experience shows that about three man-days are normally necessary to complete one Master Record for a breed if the breed is available in the station where the geneticist who is compiling the data is working.

7. PROCEDURE FOR SLAVE RECORDS

All Sources after 1960 should be used to develop the Data Bank. Exceptionally Sources before 1960 may be considered valuable, but it is recommended not to search for Sources before 1960 normally. The Source should first be reviewed. Subsequently, if it is found to be suitable, information can be extracted for Data Bank use.

Review of Source: Each source needs to be studied carefully and the following points noted.

i. Reliability. The authenticity of the data in the source need to be judged and a value between 1 (most reliable) and 5 (least reliable) be given. (Item 8 in Slave Record). Various factors such as statistical results (number of observations, standard deviations), management system, feeding standards and clear presentation of experimental design or model will serve as indicators.

ii. Documentation vs. Evaluation. The distinction between these two in each Source should be made. Documentation is simply the collation of existing data whereas Evaluation is a contemporary comparison of performance records of two or more breeds under the same environmental circumstances. Though each breed or

strain within the Source will be presented in separate Slave Records, linkage between' them will be maintained through the bibliographical reference field. (Item 6 in Slave Record).

iii. Bibliographical Reference. All Sources should be referenced even if some were found not useful. In such instances only item 6 of Slave Record will be filled. This will allow users to know the material was scanned but not used. The following sample formats need to be strictly followed in quoting the Source reference.

Journal:

Johnson, S.A., T. Killer and A. Victor. 1981. The relative performance of Friesian and Brown Swiss cattle in Nigeria. J. Anim. Sci. 51: 2222-2275.

Proceedings:

Nanda, K. and S. Singam. 1972. Growth rate and milk yield of Selembu cattle in Malaysia. Proc. Malaysian Society of Animal Production, 8th Ann. Conf., p. 197-200.

Annual Report:

Black, T. and M. White. 1965. Performance of Black and White cattle in South Africa. Ann. Rpt. No. 32. 1970, Agric. Res. Inst. , London.

Mahendra, M. and V. Buva. 1982. Factors affecting performance of Friesian crossbred cattle in Sri Lanka. Ministry of Agriculture, Sri Lanka, No. 3, 56 pp.

Idle data:

Hoest, R. and M.E. Berg. 1985. Unpublished data Livestock Department, Ministry of Agriculture, Kuala Lumpur, Malaysia.

Extraction of data: As much relevant information as possible must be extracted from the Sources. The Slave Record descriptor list needs to be referred to constantly especially during early stages, Generally, the extraction of data from the Sources may not be straight forward. Often a considerable amount of data editing is necessary and the following is a brief summary of types of data:

i. Actual Data. This is the data taken directly from the Source and transferred on to Source Data Sheets (see Section 9 of this manual) such as breed average 305-day milk yield, yearling weight and the associated number of observations, standard deviation and ranges. These figures are as given in the text of the Source.

ii. Summarised Data. Many authors give annual averages for a single trait with standard deviations and number of observations for each breed. Overall means and standard deviations need to be calculated the latter from the pooled sums of squares. An example is given in Appendix 1. A similar procedure should be followed if data are presented by herds within farm or other similar groupings.

iii. Transformed data. Some data such as those on feeding, management and adaptive characteristics are described in Sources. These data need to be

summarised and transformed into defined alternatives suitable for the standardised format of the Slave Record. For instance, grazing management may be described along with concentrate feeding giving various components. These need to be clearly defined and entered into section 18 of Slave Record.

iv. Additional Data. This refers to data pertaining to the Source but not given in the Source. The compiler should limit such supplementary data to some environmental characteristics such as meteorological records covering the period of study in the report. If accurate management characteristics such as type of housing, could be obtained from the station or from the author, they may be included. However, caution should be taken against extrapolation, guess work or searches that involve unwarranted time. Such additional data should be minimum and undertaken only if the compiler geneticist feels that such data are absolutely necessary for understanding the results.

In the case of 'idle' *data,* the compiler is expected to conduct some minimum statistical analysis as required by the Slave Record. Environmental data with relevant and reliable details should also be provided.

All statistics should be given in the metric system. Coversions from inches, lb and Fahrenheit to cm, kg and Celsius respectively, are given in Appendix 1.

During the process of data extraction, some common problems may be encountered, as follows:

i. Repeated data. There may be a few cases where part of the data in a Source is repeated in another. Only the first Source needs to be used.

ii. Adjusted data. If both raw averages as well as adjusted data are given for the same traits, the latter is recommended. Factors for which adjustments have been made to the data, need to be mentioned in section 7 of Slave Record. If only some traits were adjusted, then these traits need also be mentioned in the same section.

iii. Feeding trials. If some useful breed information is available from Sources that are nutrition orientated, and if the sample sizes are greater than 20 head per breed, then they could be used.

iv. Incomplete statistics. A few Sources, though of reliable origin, may report only averages for each trait without number of animals used and/or standard deviations. These sources should also be included, and the blank spaces in the Descriptor List will indicate the lack.

8. RELEVANT DETAILS

The compiling geneticist is encouraged to be specific and accurate while transcribing data from Sources for the Data Bank. For example, if yields of a dairy herd were given and during the period of data recording the cows were herded for some days and strip grazed on other days, both of these should be indicated in Section 8.1.1 of Slave Record of Cattle Descriptors. In addition, if details are given, the compiler should include the proportion of time for each, e.g.

herded (20%)
strip grazed (80%)

9. PRESENTATION OF DATA FOR DATA ENTRY

The Master and Slave Records should be prepared separately. Any one Source will usually have less than 40 percent of the characteristic listed in the Descriptor Lists. Therefore, to complete a set of Descriptor List for each Source will mean bulky copies of the descriptors and many items whose contents only partially filled. Further, because of the size of the Descriptor List, the necessity of reviewing the Sources before extraction of the relevant data, the need for processing of some of the data and to allow layoff time for data collection on climate, direct entry of data from Source into the computer system is not possible. It is therefore suggested that the extracted data be written on to a sheet of paper, the Source Data Sheet. Relevant climatic details are also added to the list as these details come in. In order to maintain the meaningful link between the data and its name headings, the corresponding descriptor number that appears on the left of the descriptor list (e.g. 4.4.1.1.2) is also written alongside the data on the Source Data Sheets as tag numbers. The resulting Source Data Sheets derived from the various sources are now ready for entry into the system. An example of a Source Data Sheet for a cattle Slave Record is given below.

Tag number	Source Data Sheet for a Source				
1	Kedah-Kelantan				
2	purebred				
4	800112 - 830531				
6	Mahatir, M. and S. Velu. 1970 Performance of Kedah-Kelantan cattle in Malaysia. J. Animal Sc. 32 : 1-20.				
8	3				
9	Malaysia				
9.1	Serdang				
18.1.1.3	Tethered				
18.1.2.2	improved				
18.1.4.1	Bracharia decumbens	60%			
18.1.4.2	Paspalum spp.	10%			
18.1.5.1	Centrosema	30%			
18.3.1.1	Rice bran	70%			
18.3.1.2	Molasses	20%			
18.3.1.3	Urea	3%			
18.3.1.4	Mineral mixture	7%			
18.3.2	4 kg per day per head for two weeks before calving, 3 kg. per day per head from calving to end of 100 days and 1 kg per day per head until end of lactation.				
	-				
	-				
	-				
22.1.1.1		300	18.5	3.2	16.1-20.5
22.3.2.3	12	-	113.2	7.5	109.0-118.2

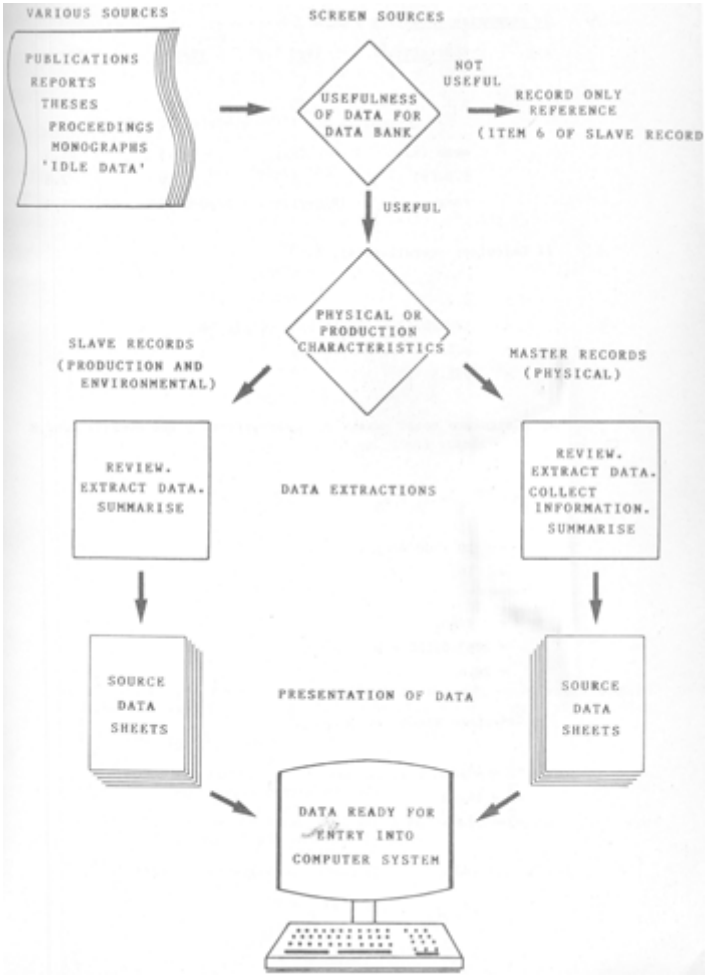
22.8.4.2	- - - 25	2.3	0.5	3.0-5.1

10. TIME FRAMEWORK

As a guide to compilers, a brief time framework is given in Appendix 2 for the various steps in the data search, extraction and presentation. This is based upon the experiences in the two-year trials held in different countries in Africa, Asia, and Latin America from 1983-85.

11. SUMMARY

Various source materials published after 1960 will be scanned and breed or strain characteristics extracted and presented in a format (free as well as fixed) that could be easily entered into a computer system. The presentation will be separate for physical characteristics (in Master Records) and performance and environmental characteristics (in Slave Records). A summarised flow chart is given below for the data extraction and presentation. For each breed/strain represented in the country, there will be one Master Record and several Slave Records. The latter will depend on the number of publications available.


VARIOUS SOURCES
PUBLICATIONS
REPORTS
THESES
PROCEEDINGS
MONOGRAPHS
'IDLE DATA'
SCREEN SOURCES
USEFULNESS OF DATA FOR DATA BANK
NOT USEFUL
RECORD ONLY REFERENCE
(ITEM 6 OF SLAVE RECORD
USEFUL
PHYSICAL OR PRODUCTION CHARACTERISTICS
SLAVE RECORDS (PRODUCTION AND ENVIRONMENTAL)
MASTER RECORDS (PHYSICAL)
REVIEW. EXTRACT DATA. SUMMARISE
DATA EXTRACTIONS
REVIEW. EXTRACT DATA. COLLECT INFORMATION. SUMMARISE
SOURCE DATA SHEETS
PRESENTATION OF DATA
SOURCE DATA SHEETS
DATA READY FOR ENTRY INTO COMPUTER SYSTEM

APPENDIX 1

A. To summarise data

e.g.

Statistics	1980	1981	1982
n :	20	30	51
mean (x)	20.1	19.5	21.5
S.D.(s)	6.5	4.0	2.8
range	18.0-21.6	17.0-21.5	19.5-24.3

1. Calculate overall total, T

$$
\begin{aligned}
T &= n.\bar{x}. \\
&= (20 \times 20.1) + (30 \times 19.5) + (51 \times 21.5) \\
&= 402.0 + 585.0 + 1096.5 \\
&= 2083.5
\end{aligned}
$$

2. Calculate total number of observations, N and overall mean.M

$$
\begin{aligned}
N &= n_1 + n_2 + n_3 \\
&= 20 + 30 + 51 \\
&= 101
\end{aligned}
$$

$$
\begin{aligned}
M &= T/\Sigma n_1 \\
&= 2083.5/(20 + 30 + 51) \\
&= 20.6
\end{aligned}
$$

3. Calculate annual variance, s2

$$
\begin{aligned}
s_1^2 &= 42.25 \\
s_2^2 &= 16.00 \\
s_3^2 &= 7.84
\end{aligned}
$$

4. Calculate annual totals, t

$$
\begin{aligned}
t_1 &= n_1 \times \bar{x}_1 = 20 \times 20.1 = 402.0 \\
t_2 &= n_2 \times \bar{x}_2 = 30 \times 19.5 = 585.0 \\
t_3 &= n_3 \times \bar{x}_3 = 51 \times 21.5 = 1096.5
\end{aligned}
$$

5. Calculate overall sum of square, S

$$S_1 = [s_1^2 (n-1)] + [x_1 t_1]$$

$$= [42.25 \times 19] + [20.1 \times 402.0]$$

$$= 8883.0$$

$$S_2 = 11871.5$$

$$S_3 = 23966.8$$

$$S = S_1 + S_2 + S_3$$

$$= 8883.0 + 11871.5 + 23966.8$$

$$S = 44721.3$$

6. Calculate overall variance, V and standard deviation, SD

$$V = \frac{S - MT}{N-1}$$

$$= \frac{44721.3 - (20.6 \times 2083.5)}{100}$$

$$= 18.0$$

$$SD = \sqrt{18}$$

$$= 4.2$$

Thus the overall number of observations, mean and standard deviations are 101, 20.6 and 4.2 respectively and range 17.0 to 24.3

B. Metric Conversion

i. To convert means and standard deviations given in lb to kg, simply divide by 2.21.
ii. To convert means and standard deviations given in inches to cm, simply multiply by 2.54
iii. To convert from Fahrenheit (F) to Celsius (C).

$$^{\circ}C = \frac{5}{9}(F - 32)$$

APPENDIX 2

Guideline of time required

		Approximate %	Approximate man-days/source
i)	Search for source	40	variable
ii)	Collect data for Master Record	15	3
iii)	Review each Source for Slave Record	15	1/2
iv)	Data extraction	25	1/2 to 7
v)	Presentation for data entry	5	1

CATTLE DESCRIPTORS

MASTER RECORD

1. Breed name
   [Use name in Mason's World Dictionary of Livestock Breeds. Types and Varieties, if the breed is given in the dictionary.]
2. Breed name synonyms
3. Strains (within breed)
4. General information and breed description
   - 4.1 Country and population data
     - 4.1.1 [country name 1] [Give date of census or estimate]
       - 4.1.1.1 population size
       - 4.1.1.2 census data
       - 4.1.1.3 estimated value
       - 4.1.1.4 unspecified

       [Categories 4.1.1.2 to 4.1.1.4 are for indicating by "Y" the type of population data.]
       - 4.1.1.5 annual population trend +%;-%; unknown
       - 4.1.1.6 herd sizes
         - government farm
           - mean
           - range
           - distribution 1-10 animals %
           - 11-50
           - 51-100
           - 101-200
           - >200
         - commercial farm
           - mean
           - range
           - distribution 1-10 animals %
           - 11-50
           - 51-100
           - 101-200
           - >2 00
         - village farm
           - mean
           - range
           - distribution 1-10 animals %
           - 11-50
           - 51-100
           - 101-200
           - >200
         - communally owned herds
           - mean
           - range
           - distribution 1-10 animals %
           - 11-50
           - 51-100

>200

4.1.1.7 origin of breed indigenous exotic

4.1.2 [country name 2]

4.1.n [country name n]

4.2 Use

4.2.1 milk

4.2.2 meat

4.2.3 draught

4.2.4 other

[For multipurpose breeds, rank usages in order of importance, 1 to n; give same (specify) ranks to traits of equal importance.

4.3. Hair characters

4.3.1 length

medium (1-2 cm)

long (>2 cm)

4.3.2 sheen

glossy

dull

4.3.3 curl

curly

straight

Colour

4.4 [Fill in fixed format fields, or write description in the free format description field, or do both.]

4.4.1 body coat (hair)

4.4.1.1 colour 1 [name]

% of surface area [range of values permissible]

males

females

sexes not separated

4.4.1.2 colour 2

% of surface area

males

females

sexes not separated

4.4.1.3 colour 3 % % of surface area

males

females

sexes not separated

4.4.1.4 colour 4 % of surface area

males

females

sexes not separated

4.4.2 body skin

4.4.2.1 colour 1 % of surface area

males

females

sexes not separated

4.4.2.2 colour 2 % of surface area
males
females
sexes not separated

4.4.3 muzzle

4.4.3.1 colour 1 % of surface area
males
females
sexes not separated

4.4.3.2 colour 2 % of surface area
males
females
sexes not separated

4.4.3.3 colour 3 % of surface area
males
females
sexes not separated

4.4.3.4 colour 4 % of surface area
males
females
sexes not separated

4.4.4 eyelids

4.4.4.1 colour 1 % of surface area
males
females
sexes not separated

4.4.4.2 colour 2 % of surface area
males
females
sexes not separated

4.4.5 hoof

4.4.5.1 colour 1 % of surface area
males
females
sexes not separated

4.4.5.2 colour 2 % of surface area
males
females
sexes not separated

4.4.6 horns

males

black
brown
white
other (specify)

females
black
brown
white
other (specify)
sexes not specified
black
brown
white
other (specify)

4.4.7 specific patterns
[describe, e.g. coloursided, white socks, etc.]

4.5 head

4.5.1 profile
ultra-convex
convex
concave
straight

4.5.2 horns

4.5.2.1 presence or absence
males
horned
polled
females
horned
polled

4.5.2.2 size at maturity [length of one horn]
males
short (<40 cm)
medium (4l-100 cm)
long (>100 cm)
females
short (<40 cm)
medium (4l-100 cm)
long (>100 cm)

4.5.2.3 shape
males
straight
curved
females
straight
curved

4.5.2.4 orientation males
lateral pointing tips
inward pointing tips

upward pointing tips
downward pointing tips
forward pointing tips
backward pointing tips
females
lateral pointing tips
inward pointing tips
upward pointing tips
downward pointing tips
forward pointing tips
backward pointing tips
4.5.2.5 attachment in adults
loose horns
% of males
% of females
4.5.3 ears
4.5.3.1 orientation
horizontal
drooping
4.5.3.2 length
<15 cm 16-30 cm >
30 cm
4.6 Body
4.6.1 hump
males
large
medium
small
absent
female
large
medium
small
absent
4.6.2 croup
horizontal
sloping
4.6.3 dewlap
males
large
medium
small
absent
females
large

medium
small
absent

4.6.4 navel flap

males large
medium
small
absent

females

large
medium
small
absent

4.6.5 penis sheath flap

large
medium
small
absent

4.7 Basic temperament

males

docile
moderately tractable
wild

females

docile
moderately tractable
wild

4.8 Drought tolerance

[Allocate grades 1-5; l=hlgh]

4.9 Heat tolerance

[Allocate grades 1-5; l=high]

4.10 Resistance to diseases and parasites

[Free format field; write word description]

4.11 Conservation status

4.11.1 endangered
4.11.2 vulnerable
4.11.3 rare
4.11.4 indeterminate
4.11.5 out of danger
4.11.6 insufficiently known
4.11.7 not at risk (none of the above)

The first six of these categories are used by the International Union for the Conservation of Nature and Natural Resources. Their definitions, slightly amended, are as follows.

Endangered : Breeds in danger of extinction, and whose survivalis unlikely if the causal factors continue operating.

Vulnerable: Breeds likely to move into the Endangered category in the near future if the causal factors continue operating

Rare: Breeds with small populations that are not at present Endangered or Vulnerable, but are at risk.

Indeterminate: Breeds known to be Endangered. Rare or Vulnerable, but where there is not enough information to say which of the three categories is appropriate.

Out of Danger: Breeds formerly included in one of the above categories, but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has been removed.

Insufficiently Known: Breeds that are suspected but not definitely known to belong to any of the above categories, because of lack of information.

Free format breed description field

4.12 [A description of breed characters may be entered here instead of the fixed fields of sections 4.3 to 4.9, or material may be added to supplement the fixed fields.]

5. Master record prepared by:
   - 5.1 Name:
   - 5.2 Title: [Dr, Mr. Miss, etc.]
   - 5.3 Address:
   - 5.4 Affiliation: [Organisation, Company, Consultant, etc.]
   - 5.5 Date of preparation:
6. Master record updating or editing
   - 6.1 First amendment by:
     - 6.1.1 Name:
     - 6.1.2 Title:
     - 6.1.3 Address:
     - 6.1.4 Affiliation:
     - 6.1.5. Date of amendment:
     - 6.n Nth amendment by:
       - 6.n.1 Name:
       - 6.n.2 Title:
       - 6.n.3 Address:
       - 6. n. 4 Affiliation:
       - 6.n.5 Date of amendment

SLAVE:RECORD

1. Breed name of MASTER record
2. Breed/crossbred type of SLAVE record
   [Give exact composition if possible, e.g. 75% Brown Swiss-25% Sahiwal.]
3. Strain (or distinct within-breed type)
4. Period of data
   year month day [e.g. 1982:05:14]
   From
   To
5. Data form prepared by:
   - 5.1 Name:
   - 5.2 Title : [Dr, Mr, Miss, etc.]
   - 5.3 Address:
   - 5.4 Affiliation: [Organisation, Company, Consultant, etc,]
   - 5.5 Date of preparation:
6. Bibliographical reference of source document
   [pointer to the reference stored in the bibliographical file]
7. Data type and analysis
   - 7.1 Data
     - 7.1.1 unadjusted data
     - 7.1.2 data adjusted for environmental or other factors*
     - 7.1.3 survey data

     *[adjusted by the author of the original paper or document]
   - 7.2 Treatment of data
     - 7.2.1 descriptive
     - 7.2.2 analytical
     - 7.2.3 none
8. Reliability code
   [Grade data subjectively on a scale of 1 to 5: l=highly reliable, 5=low reliability.]
9. Country [in which data were recorded or experiment carried out, etc.]
   - 9.1 country subdivision(s) [province, county, district, etc]
10. Terrestrial environment
    - 10.1 Tropical rainforest
    - 10.2 Tropical deciduous forest
    - 10.3 Tropical scrub forest
    - 10.4 Tropical savannah
    - 10.5 Desert
    - 10.6 Mediterranean woodland and scrub
    - 10.7 Middle latitude grassland
      - 10.7.1 highland grass
      - 10.7.2 moorland

10.7.3 marshland
10.8 Middle latitude deciduous forest
10.9 Coniferous forest
10.10 Tundra
10.11 Free format terrestrial environment field
[Include information on problems associated with vegetation, e.g. toxic plants]

11. Elevation and topography
11.1 Elevation
mean
range
11.2 Topography
[Free format field. The description should include the following items, when information on them is available: roughness of terrain; slope; nature of surface (rocky, sandy, stony, etc.); surface drainage (poor, seasonally wet, well drained, etc.)

12. Climate
12.1 Rainfall (mm)
12.1.1 annual precipitation
mean
range
12.1.2 seasonality
12.1.2.1 non-seasonal
12.1.2.2 seasonal
[input as, e.g. 05-07, meaning May to July
12.1.3 free format rainfall data
12.2 Temperature (degrees C)
12.2.1 average annual temperature
mean of several years
range of several years
12.2.2 maximum temperature in year
mean maximum of several years
range of several years
month(s) of maximum temperature
12.2.3 minimum temperature in year
mean minimum of several years
range of several years
month(s) of minimum temperature
12.2.4 free format temperature data
12.3 Relative humidity (RH)
12.3.1 average annual RH
mean of several years
range of several years
12.3.2 maximum RH in year
mean maximum of several years
range of several years
month(s) of maximum RH
12.3.3 minimum RH in year

mean minimum of several years
range of several years
month(s) of maximum RH

12.3.4. free format RH data

13. Socio-management system
    - 13.1 Static domicile
        - 13.1.1 extensive management
            - 13.1.1.1 peasant agriculture
            - 13.1.1.2 commercial ranching
        - 13.1.2 village agriculture (smallholdings)
        - 13.1.3 intensive management
            - 13.1.3.1 grassland or forage based
            - 13.1.3.2 arable associated
    - 13.2 Transhumance
    - 13.3 Nomadism

[See Glossary for definitions.]

    - 13.4 Free format field for socio-management system
14. Type of farm
    - 14.1 Peasant agriculture
    - 14.2 Breeding centre
    - 14.3 Commercial production unit
    - 14.4 Experiment station
    - 14.5 Field experiment
    - 14.6 Multiplication unit
    - 14.7 Other (specify)
    - 14.8 Free format field for farm type
15. Degree of management supervision
    - 15.1 Advisory services
    - 15.2 Resident professional supervision
    - 15.3 Supervision by scientific staff of investigation project
    - 15.4 None
16. Mating method
    - 16.1 Uncontrolled, non-seasonal, natural mating
    - 16.2 Uncontrolled, seasonal, natural mating (multiple sire)
    - 16.3 Uncontrolled, seasonal, natural mating (1 sire per herd)
    - 16.4 Hand mating
    - 16.5 AI in part of herd

fresh semen
frozen semen
fresh and frozen semen

    - 16.6 AI, plus natural mating for cows returning to service

fresh semen
frozen semen
fresh and frozen semen

    - 16.7 AI only

fresh semen
frozen semen
fresh and frozen semen

16.8 Other (specify)

17. Herd size
    17.1 Number of breeding females
        mean
        range
    17.2 Number of replacement females (weaning to transfer intobreeding herd)
        mean
        range
    17.3 Number of stud males
        mean
        range
    17.4 Number of bulls not used for breeding
        mean
        range
    17.5 Number of steers
        mean
        range
    17.6 Number of calves
        mean
        range
18. Nutrition
    18.1 Grazing
        18.1.1 method
            18.1.1.1 zero grazed
            18.1.1.2 herded
            18.1.1.3 tethered
            18.1.1.4 fenced
            18.1.1.5 strip grazed
            18.1.1.6 other (specify)
        18.1.2 pasture classification
            18.1.2.1 unimproved
            18.1.2.2 improved
        18.1.3 water supply of pasture
            18.1.3.1 rainfed
            18.1.3.2 irrigated
        18.1.4 dominant grass species
            18.1.4.1 species 1 [give botanical name]
                % of sward
            18.1.4.2 species 2
                % of sward
            l8.1.4.n species n
                % of sward

18.1.5 legume species
18.1.5.1 species 1
% of sward
18.1.5.2 species 2
% of sward
18.l.5.n species n
% of sward

18.2 Fodder crops
18.2.1 cut green fodder
18.2.2 hay
18.2.3 silage
18.2.4 other (specify)
18.2.5 free format field for amounts fed

18.3 Concentrates
18.3.1 ingredients
18.3.1.1 ingredient 1 [name]
% of concentrate diet
18.3.1.2 ingredient 2
% of concentrate diet
l8.3.1.n ingredient n
% of concentrate diet
18.3.2 free format field for amounts of concentrates fed
[For 18.2.5 and 18.3.2. as a minimum entry specify whether feeding is ad-lib. or not ad-lib.]

18.4 Water
l8.4.l sufficient to meet requirements
18.4.2 supply inadequate
[Specify months in which supply is inadequate. e.g. 03 to 05.]

18.5 Minerals
18.5.1 supply adequate
18.5.1.1 supplements not fed
18.5.1.2 supplements fed
18.5.2 supply inadequate
18.5.2.1 supplements not fed
18.5.2.2 supplements fed

18.6 Seasonality of nutrition
18.6.1 feeding adequate all year round
18.6 2 feeding inadequate in some months (specify)

18.7 Calf feeding
18.7.1 suckling (specify weaning age)
18.7.2 milk replacer system

19. Housing
19.1 none
19.2 only during the day
19.3 only at night

19.4 day and night
19.5 for part of day
19.6 type (specify)

Diseases and parasites

20. [Free format field for noting any diseases prevalent at the time that performance data were recorded.]

Measures against diseases and parasites

21. [Free format field for recording prophylactic measures; in particular, dipping, anthelmintic dosing and vaccination.]

22. Performance

Body weight

22.1 [Give all weights in kg; N = number of observations; SD standard deviation; males = entire males.]

			N	Mean	SD	Range
22.1.1	birth		-	-	-	-
		males				
		females				
		unspecified				
22.1.2	preweaning [free format; state ages]		-	-	-	-
		males				
		females				
		steers				
		unspecified				
22.1.3	Weaning	Age	N	Mean	SD	Range
		males	-	-	-	-
		females				
		steers				
		unspecified				
22.1.4	twelve months		N	Mean	SD	Range
		males	-	-	-	-
		females				
		steers				
		unspecified				
22.1.5	eighteen months		-	-	-	-
		males				
		females				
		steers				
		unspecified				
22.1.6	twenty-four months		-	-	-	-
		males				
		females				
		steers				
		unspecified				
22.1.7	first mating		-	-	-	-
		males				
		females				

22.1.8 first calving - - - -
22.1.9 maturity - - - -
males
females
steers
unspecified
22.1.10 slaughter - - - -
males
females
steers
unspecified
[Specify if animals fasted (F), not fasted (NF), or fasting status unknown (U).]
22.1.11 free format field for ages not specified in 22.1.1 to 22.1.10.

22.2 Average daily gain			N	Mean	SD	Range
22.2.1 preweaning						
	22.2.1.1	unspecified age (or weight) range				
		males	-	-	-	-
		females				
		steers				
		unspecified				
	22.2.1.2	age (or weight) range 1 (specify)				
		males				
		females				
		steers				
		unspecified				
	22.2.1.n	age (or weight) range n				
		males				
		females				
		steers				
		unspecified				
22.2.2 postweaning			N	Mean	SD	Range
	22.2.2.1	unspecified age (or weight) range				
		males	-	-	-	-
		females				
		steers				
		unspecified				
	22.2.2.2	age (or weight) range 1 (specify)				
		males	-	-	-	-
		females				
		steers				
		unspecified				
	22.2.2.n	age (or weight) range n				
		males				
		females				
		steers				

unspecified

22.2.3 feed conversion for growth
[free format field]

22.3 Body measurements — Age | N | Mean | SD | Range

22.3.1 chest girth

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
steers					
unspecified					

[Up to 4 ages can be recorded for all body measurements, repeating the sex classes required.]

22.3.2 body length
- males
- females
- steers
- unspecified

22.3.3 height at withers
- males
- females
- steers
- unspecified

22.3.4 free format field for data on other body measurements
[Enter data in the same way as for the measurements specified above.]

22.4 Double muscling

22.4.l present
- males (% of animals affected)
- females (% of animals affected)

22.4.2 absent
- males
- females

22.4.3 degree of expression of trait
[free format description]

22.5 Carcass characters
[Each character can be recorded at up to 4 ages, as with, body measurements.]

22.5.1 weight

22. 5.1.1 hot

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
steers					
unspecified					

22.5.1.2 cold
- males
- females
- steers

			unspecified					
22.5.2	length	males		-	-	-	-	-
		females						
		steers						
		unspecified						
22.5.3	dressing percentage			Age	N	Mean	SD	Range
	22.5.3.1	hot						
			males	-	-	-	-	-
			females					
			steers					
			unspecified					
	22.5.3.2	cold						
			males					
			females					
			steers					
			unspecified					
	22.5.3.3	not specified if hot or cold						
			males					
			females					
			steers					
			unspecified					
22.5.4	hide percentage			-	-	-	-	-
		males						
		females						
		steers						
		unspecified						
22.5.5	meat:bone ratio			-	-	-	-	-
		males						
		females						
		steers						
		unspecified						
22.5.6	hindquarter:forequarter ratio							
		males		-	-	-	-	-
		females						
		steers						
		unspecified						
22.5.7	rib-eye area [Specify rib/vertebra number.]							
		males		-	-	-	-	-
		females						
		steers						
		unspecified						
22.5.8.	fat thickness (mm) [subcutaneous, specify site]			-	-	-	-	-
		males						
		females						

steers
unspecified

22.5.9 lean percentage - - - - -
males
females
steers
unspecified

22.5.10 fat percentage - - - - -
males
females
steers
unspecified

		Age	N	Mean	SD	Range
22.5.11	bone percentage	-	-	-	-	-

males
females
steers
unspecified

22.5.12 free format field for other carcass characters

22.6 Dairy performance

22.6.1 milking system

22.6.1.1 hand milking with calf
22.6.1.2 hand milking without calf
22.6.1.3 machine milking with calf
22.6.1.4 machine milking without calf
22.6.1.5 mixed (combination of the above; specify which)
22.6.1.6 other system (specify)
22.6.1.7 daily milking frequency

22.6.2 milk let-down

22.6.2.1 % of 1st lactation cows failing to let down mill in absence of the calf
22.6.2.2 % of lactations of 120 days or less

		N	Mean	SD	Range
22.6.3	total lactation milk yield	-	-	-	-

22.6.3.1 first lactation
22.6.3.2 second lactation
22.6.3.3 third lactation
22.6.3.4 fourth or later lactation
22.6.3.5 all lactations

22.6.4 305-day milk yield - - - -

22.6.4.1 first lactation
22.6.4.2 second lactation
22.6.4.3 third lactation
22.6.4.4 fourth or later lactation
22.6.4.5 all lactations

22.6.5	daily milk yield			-	-	-	-
	22.6.5.1	first lactation					
	22.6.5 2	second lactation					
	22.6.5.3	third lactation					
	22.6.5.4	fourth or later lactation					
	22.5.5.5	all lactations					
22.6.6	milk yield per day of calving interval						
	22.6.6.1	first lactation					
	22.6.6.2	second lactation					
	22.6.6.3	third lactation					
	22.6.6.4	fourth or later lactation					
	22.6.6.5	all lactations					
22.6.7	milk fat yield			-	-	-	-
	22.6.7.1	first lactation					
	22.6.7.2	second lactation					
	22.6.7.3	third lactation					
	22.6.7.4	fourth or later lactation					
	22.6.7.5	all lactations					
				N	Mean	SD	Range
22.6.8	milk protein yield			-	-	-	-
	22.6.8.1	first lactation					
	22.6.8.2	second lactation					
	22.6.8.3	third lactation					
	22.6.8.4	fourth or later lactation					
	22.6.8.5	all lactations					
22.6.9	milk fat percentage [M = 1actation month in which recorded; F = frequence of recording						
			M	F	N	Mean	SD	Range
	22 6.9.1	first lactation	-	-	-	-	-	-
	22.6.9.2	second lactation						
	22.6.9.3	third lactation						
	22.6.9.4	fourth or later lactation						
	22.6.9.5	all lactations						
22.6.10	milk protein percentage		-	-	-	-	-	-
	22.6.10.1	first lactation						
	22.6.10.2	second lactation						
	22.6.10.3	third lactation						
	22.6.10.4	fourth or later lactation						
	22.6.10.5	all lactations						
22.6.11	SNF percentage		-	-	-	-	-	-
	22.6.11.1	first lactation						
	22.6.11.2	second lactation						
	22.6.11.3	third lactation						
	22.6.11.4	fourth or later lactation						

22.6.11.5 all lactations

22.6.12 milklng rate (kg/min) - - - - - -

22.6.12.1 first lactation

22.6.12.2 second lactation

22.6.12.3 third lactation

22.6.12.4 fourth or later lactation

22.6.12.5 all lactations

22.6.13 lactation duration (days)

22.6.13.1 first lactation

22.6.13.2 second lactation

22.6.13.3 third lactation

22.6.13.4 fourth or later lactation

22.6.13.5 all lactations

22.6.14 persistency of lactation

free format field [specifiy which measure of presistency is being used.]

		N	Mean	SD	Range
22.6.15	productive lifespan (months)	-	-	-	-
22.6.16	feed conversion for milk [free format field]				

22.7 Type of work

22.7.1 ploughing

paddy

dry land

22.7.2 haulage

22.7.3 back-packing

22.7.4 Power (i.e. for pumping, milling. etc.)

22.7.5 free format field for work

22.8 Reproduction

		N	Mean	SD	Range
22. 8.1	sexual maturity of maies (days)				
22.8.1.1	age at lst ejaculation	-	-	-	-
22.8.1.2	age at lst mating				

22. 8.2 sexual maturity of females (days)

22.8.2.1 age at lst oestrus

22.8.2.2 age at lst ovulation

22.8.2.3 age at lst matine

22.8.2.4 body weight at first oestrus

22. 8.3 oestrous cycle

22.8.3.1 cycle duration (days) - - - -

22.8.3.2 oestrus duration (hours)

22.8.3.3 seasonality

[% of females in oestrus in each calendar month]

22.8.3.4 synchronisation practised

yes

no

22.8.3.5 interval from calving

to lst oestrus

22.8.3.6 detection method

herdsman

teaser

entire maie

electrical resistance of vaginal mucus/mucosa

other (specify)

22. 8.4 fertility and fecundity

22.8.4.1 conception rate {%)

AI

natural service

AI + natural service

22.8.4.2 number of services per conception - - - -

AI

natural service

AI + natural service

22.8.4.3 number of services per calving - - - -

AI

natural service

AI + natural service

22.8.4.4 interval from calving to conception (days)

22.8.4.5 calving Interval (days)

22.8.4.6 calving percentage

22.8.4.7 twinning percentage

22.8.5 gestation length (days) - - - -

22.8.6 dystocia

22.8.6.1 % of manually assisted calvings

22.8.6.2 % of caesarian births

22.8.5.3 % of embryotomies

22.8.7 placental retention

% of manual removals

22.8.8 semen

22.8.8.1 inherited sperm abnormalities
[free format field for description and data]

22.8.8.2 other characters
[free format field]

22.8.9 prenatal mortality - - - -

22.8.9.1 embryo (%)

22.8.9.2 abortion (%)

22.8.9.3 stillbirths (%)

22.8.10 reproductive disorders [free format field]

22.8.10.1 non-infectious
[Give name and frequency of eaoh.]

22.8.10.2 infectious
[Give name and frequency of each.]

22.9 Postgestational mortality

22. 9.1 preweaning (%)
22. 9.2 postweaning (%) - specify period

23. Physiology
23.1 Reaction to solar radiation
23.1.1 relative increase due to exposure (%)
23.1.1.1 rectal temperature (males)
age (months)
duration of exposure (hours)
mean
SD
range
23.1.1.2 rectal temperature (females)
age
duration of exposure
mean
SD
range
23.1.1.3 puise rate (males)
age
duration of exposure
mean
SD
range
23.1.1.4 puise rate (females)
age
duration of exposure
mean
SD
range
23.1.1.5 respiration rate (males)
age
duration of exposure
mean
SD
range
23.1.1.6 respiration rate (females)
age
duration of exposure
mean
SD
range
23.1.1.7 environmental factors during the test

	Mean	SD	Range
air temperature (degrees C)			
before stress			

during stress

relative humidity (%)

before stress

during stress

wind velocity (m/s)

before stress

during stress

24. Genetic parameters

		Value	SE	Range
24.1	Heritability			
24.1.1	trait 1	-	-	-

[SE = standard error]

24.1.n trait n

24.2 Repeatability

2.2.1 trait 1

24.1.n trait n

24.3 Genetic correlation

(1) between .... and	-	-	-
(n) between .... and	-	-	-

24.4 Other genetic parameters

[free format field]

24.5 Inbreeding coefficient

25. Cytogenetics

25.1 Chromosome abnormalities

25.1.1 translocations

[free format field; designation of translocation; frequency in population]

26. Inherited abnormalities

[free format field; give name, gene symbol (if relevant), and gene frequency when known)

27. Resistance to infectious diseases and parasites

27.1 Strain or breed comparisons

27.1.1 helminths, arthropods and protozoa

[free format field; specify comparative incidence.and/or mortality, including faecal egg counts, tick resistance indices,etc.]

27.1.2 diseases due to agents other than in 27.1.1

[free format field; specify comparative incidence and/or mortality.]

DATA BANK FOR ANIMAL GENETIC RESOURCES: DESCRIPTOR LISTS BUFFALO DESCRIPTORS

MASTER RECORD

Breed name

1. [Use name in Mason's World Dictionary of Llvestock Breeds. Types an Varietles. if the breed is given in the dictionary.]
2. Breed name synonyms
3. Type
   - 3.1 River
   - 3.2 Swamp
4. General information and breed description
   - 4.1 Country and population data
     - 4.1.1 [country name 1] [Give date of census or estimate]
       - 4. 1.1.1 population size
       - 4.1.1.2 census data
       - 4.1.1.3 estimated value
       - 4.1.1.4 unspecified

       [Categories 4.1.1. 2 to 4 .1.1.4 are for indicating by "Y" the type of population data.]
       - 4.1.1.5 annual population trend
         +%; -%; unknown
       - 4.1.1.6 herd sizes

government farm
mean
range
distribution 1-10 animals %
11-50
51-100
101-200
>200
commercial farm
mean
range
distribution 1-10 animals %
11-50
51-100
101-200
>200
village farm
mean
range
distribution 1-10 animals %
11-50
51-100
>200

communally owned herds
mean
range
distribution 1-10 animals
11-50
51-100
101-200
>200

4.1.1.7 origin of breed
indigenous
exotic

4.1.2 [country name 2]
4.1.n [country name n]

4.2 Use

4.2.1 milk
4.2.2 meat
4.2.3 draught
4.2.4 other (specify)

[For multipurpose breeds, rank usages in order of importance, 1 to n; give same ranks to traits of equal importance.]

4.3 Colour

[Fill in fixed format fields, or write description in the free format description field, or do both.]

4.3.1 body
grey
dark
medium
light
grey-brown
brown
piebald
skewbald
roan
other (specify

4.3.2 hoof
colour 1 % of surface area
males
females
sexes not separated
colour 2 % of surface area
males
females
sexes not separated

4.3.3 horns
males
black
brown

white
other (specify)
females
black
brown
white
other (specify)
sexes not specified
black
brown
white
other (specify)

4.3.4. specifie patterns
[describe, e.g. white patches, dark points, etc.]

4.4 head

4.4.1 profile
convex
concave
straight

4. 5 horns

4.5.1 size at maturity [length of one horn]
males
short (<40 cm)
medium (41-100 cm)
long (>100 cm)
females
short (<40 cm)
medium (41-100 cm)
long (>100 cm)

4.5.2 shape and orientation
lateral and. horizontal
downward and backward
curled
crescent or sickle shaped
other (specify)

4.5.3 attachment in adults
loose horns
% of males
% of females

4.6 Basic temperament
males
docile
moderately tractable
wild
females

docile
moderately tractable
wild

4.7 Wallowing preference
clean water
mud

4.8 Conservation status
4.8.1 endangered
4.8.2 vulnerable
4.8.3 rare
4.8.4. indeterminate
4.8.5 out of danger
4.8.6 insufficiently known
4.8.7 not at risk (none of the above)

The first six of these categories are used by the International Union for the Conservation of Nature and Natural Resources. Their definitions, slightly amended, are as follows.

Endangered: Breeds in danger of extinction, and whose survive is unlikely if the causal factors continue operating.

Vulnerable : Breeds likely to move into the Endangered categoj in the near future if the causal factors continue operating.

Rare : Breeds with small populations that are not at present Endangered or Vulnerable, but are at risk.

Indeterminate: Breeds known to be Endangered. Rare or Vulnerable, but where there is not enough information to say: which of the three categories is appropriate.

Out of Danger: Breeds formerly included in one of the above categories, but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has been removed.

Insufficiently Known: Breeds that are suspected but not definitely known to belong to any of the above categories, because of lack of Information.

4.8 Free format breed description field

[A description of breed characters may be entered here instead of the fixed fields of sections 4.3 to 4.7. or material may be added to supplement the fixed fields.]

5. Master record prepared by:
5.1 Name:
5.2 Title: [Dr. Mr, Miss, etc.]
5.3 Address:
5.4 Affiliation: [Organisation, Company, Consultant, etc.]
5.5 Date of preparation:

6. Master record updating or editing
6.1 First amendment by:
6.1.1 Name:
6.1.2 Title:
6.1.3 Address:
6.1.4 Affiliation:
6.1.5 Date of amendment:

6.n Nth amendment by:

6.n.1	Name:
6.n.2	Title:
6.n.3	Address:
6.n.4	Affiliation:
6.n.5	Date of amendment

SLAVE RECORD

1. Breed name of MASTER record
2. Breed/crossbred type of SLAVE record
   [Give exact composition if possible, e.g. 75% Nili-Ravi 25% Murrah.]
3. Strain (or distinct within-breed type)
4. Period of data
   year month day [e.g. 1982:05:14]
   From
   To
5. Data form prepared by:
   - 5.1 Name:
   - 5.2 Title: [Dr. Mr. Miss, etc.]
   - 5.3 Address:
   - 5.4 Affiliation: [Organisation, Company, Consultant, etc.]
   - 5.5 Date of preparation:
6. Bibliographical reference of source document
   [pointer to the reference stored in the bibliographical file]
7. Data type and analysis
   - 7.1 Data
     - 7.1.1 unadjusted data
     - 7.1.2 data adjusted for environmental or other factors*
     - 7.1.3 survey data

     *[adjusted by the author of the original paper or document]
   - 7.2 Treatment of data
     - 7.2.1 descriptive
     - 7.2.2 analytical
     - 7.2.3 none
8. Reliability code
   [Grade data subjectively on a scale of 1 to 5; l=highly reliable, 5=low reliability.]
9. Country [in which data were recorded or experiment carried out, etc.]
   - 9.1 country subdivision(s) [province, county, district, etc]
10. Terrestrial environment
    - 10.1 Tropical rainforest
    - 10.2 Tropical deciduous forest
    - 10.3 Tropical scrub forest
    - 10.4 Tropical savannah
    - 10.5 Desert
    - 10.6 Mediterranean woodland and scrub
    - 10.7 Middle latitude grassland
      - 10.7.1 highland grass
      - 10.7.2 moorland
      - 10.7.3 marshland
    - 10.8 Middle latitude deciduous forest
    - 10.9 Coniferous forest
    - 10.10 Tundra

10.11 Free format terrestrial environment field
[Include information on problems associated with vegetation, e.g. toxic plants]

11. Elevation and topography

11.1 Elevation
mean
range

11.2 Topography
[Free format field. The description should include the following items, when information on them is available: roughness of terrain; slope; nature of surface (rocky, sandy, stony, etc.); surface drainage (poor, seasonally wet, well drained, etc.)]

12. Climate

12.1 Rainfall (mm)

12.1.1 annual precipitation
mean
range

12.1.2 seasonality

12.1.2.1 non-seasonal

12.1.2.2 seasonal [input as, e.g. 05-07. meaning May to July

12.1.3 free format rainfall data

12.2 Temperature (degrees C)

12.2.1 average annual temperature
mean of several years
range of several years

12.2.2 maximum temperature in year
mean maximum of several years
range of several years
month(s) of maximum temperature

12.2.3 minimum temperature in year
mean maximum of several years
range of several years
month(s) of maximum temperature

12.2.4 free format temperature data

12.3 Relative humidity (RH)

12.3.1 average annual RH
mean of several years
range of several years

12.3.2 maximum RH in year
mean maximum of several years
range of several years
month(s) of maximum RH

12.3.3 minimum RH in year
mean minimum of several years
range of several years
month(s) of maximum RH

12.3.4. free format RH data

13. Socio-management system
    - 13.1 Feral
    - 13.2 Semi-feral
    - 13.3 Village/smallholder agriculture
    - 13.4 ranching
    - 13.5 intensive
        - 13.5.1 urban/suburban smallholder
        - 13.5.2 milk colony
        - 13.5.3 dairy farm other than
    - 13.4 Free format field for socio-management system
14. Type of farm
    - 14.l Peasant agriculture
    - 14.2 Breeding centre
    - 14.3 Commercial production unit
    - 14.4 Experiment station
    - 14.5 Field experiment
    - 14.6. Multiplication unit
    - 14.7 Other (specify)
    - 14.8 Free format field for farm type
15. Degree of management supervision
    - 15.1 Advisory services
    - 15.2 Resident professional supervision
    - 15.3 Supervision by scientific staff of investigation project
    - 15.4 None
16. Mating method
    - 16.1 Uncontrolled, non-seasonal, natural mating
    - 16.2 Uncontrolled, seasonal, natural mating (multiple sire)
    - 16.3 Uncontrolled, seasonal, natural mating (1 sire per herd)
    - 16.4 Hand mating
    - 16.5 AI in part of herd
        - fresh semen
        - frozen semen
        - fresh and frozen semen
    - 16.6 AI, plus natural mating for cows returning to service
        - fresh semen
        - frozen semen
        - fresh and frozen semen
    - 16.7 AI only
        - fresh semen
        - frozen semen
        - fresh and frozen semen
    - 16.8 Other (specify)
17. Herd size
    - 17.1 Number of breeding females
        - mean

range

17.2 Number of replacement females (weaning to transfer into breeding herd)
mean
range

17.3 Number of stud males
mean
range

17.4 Number of bulls not used for breeding
mean
range

17.5 Number of castrated males
mean
range

17.6 Number of calves
mean
range

18. Nutrition

18.1 Grazing

18.1.1 method
18.1.1.1 zero grazed
18.1.1.2 herded
18.1 1 3 tethered
18.1.1.4 fenced
18.1.1.5 strip grazed
18.1.1.6 other (specify)

18.1.2 pasture classification
18.1.2.1 unimproved
18.1.2.2 improved

18.1.3 water supply of pasture
18.1.3.1 rainfed
18.1.3.2 irrigated

18.1.4 dominant grass species
18.1.4.1 species 1 [give botanical name]
% of sward
18.1.4.2 species 2
% of sward
18.1.4.n species n
% of sward

18.1.5 legume species
18.1.5.1 species 1
% of sward
18.1.5.2 species 2
% of sward
18.1.5.n species n
% of sward

18.2 Fodder crops
- 18.2.1 cut green fodder
- 18.2.2 hay
- 18.2.3 silage
- 18.2.4 other (specify)
- 18.2.5 free format field for amounts fed

18.3 Concentrates
- 18.3.1 ingredients
  - 18.3.1.1 ingredient 1 [name]
    % of concentrate diet
  - 18.3.1.2 ingredient 2
    % of concentrate diet
  - 18.3.l.n ingredient n
    % of concentrate diet
- 18.3.2 free format field for amounts of concentrates fed [For 18.2.5 and 18.3.2, as a minimum entry specify whether feeding is ad-lib, or not ad lib..]

18.4 Water
- 18.4.1 sufficient to meet requirements
- 18.4.2 supply inadequate [Specify months in which supply is inadequate, e.g. 03 to 05.]

18.5 Minerals
- 18.5.1 supply adequate
  - 18.5.1.1 supplements not fed
  - 18.5.1.2 supplements fed
- 18.5.2 supply inadequate
  - 18.5.2.1 supplements not fed
  - 18.5.2.2 supplements fed

18.6 Seasonality of nutrition
- 18.6.1 feeding adequate all year round
- 18.6 2 feeding inadequate in some months (specify)

18.7 calf feeding
- 18.7.1 suckling
  weaning age
- 18.7.2 milk replacer system

19. Housing
- 19.1 none
- 19.2 only during the day
- 19.3 only at night
- 19.4 day and night
- 19.5 for part of day
- 19.6 type (specify)

20. Diseases and parasites [Free format field for noting any diseases prevalent at the time that performance data were recorded.]

21. Measures against diseases and parasites [Free format field for recording prophylactic measures; in particular, dipping, anthelmintic dosing and vaccination.]

22. Performance

22.1 Body weight [Give all weights in kg: N = number of observations: SD = standard deviation; males = entire males.]

			N	Mean	SD	Range
22.1.1	birth		-	-	-	-
		males				
		females				
		unspecified				
22.1.2	preweaning [free format; state ages]		-	-	-	-
		males				
		females				
		castrated males				
		unspecified				
22.1.3	weaning	Age	N	Mean	SD	Range
		males -	-	-	-	-
		females				
		castrated males				
		unspecified				
22.1.4	twelve months		N	Mean	SD	Range
		males	-	-	-	-
		females				
		castrated males				
		unspecified				
22.1.5	eighteen months		-	-	-	-
		males				
		females				
		castrated males				
		unspecified				
22.1.6	twenty-four months		-	-	-	-
		males				
		females				
		castrated males				
		unspecified				
22.1.7	first mating		-	-	-	-
		males				
		females				
22.1.8	first calving		-	-	-	-
22.1.9	maturity		-	-	-	-
		males				
		females				
		castrated males				
		unspecified				
22.1.10	slaughter		-	-	-	-
		males				
		females				

castrated malesunspecified [Specify if fasted (F). not fasted (NF), or fasting status unknown.]

22.1.11 free format field for ages not specified in 22.1.1 to 22.1.11.

22.2	Average daily gain			N	Mean	SD	Range
	22.2.1	preweaning					
		22.2.1.1	unspecified age (or weight) range	-	-	-	-
			males				
			females				
			castrated males				
			unspecified				
		22.2.1.2	age (or weight) range 1 (specify)				
			males				
			females				
			castrated males				
			unspecified				
		22.2.l.n	age (or weight) range n				
			males				
			females				
			castrated males				
			unspecified				
	22.2.2	postweaning		N	Mean	SD	Range
		22.2.2.1	unspecified age (or weight) range				
			males	-	-	-	-
			females				
			castrated males				
			unspecified				
		22.2.2.2	age (or weight) range 1 (specify)				
			males	-	-	-	-
			females				
			castrated males				
			unspecified				
		22.2.2.n	age (or weight) range n				
			males				
			females				
			castrated males				
			unspecified				
	22.2.3	feed conversion for growth [free format field]					

22.3	Body measurements		Age	N	Mean	SD	Range
	22.3.1	chest girth	-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					

[Up to 4 ages can be recorded for all body measurements, repeating the sex

classes required.]

22.3.2 body length

males
females
castrated males
unspecified

22.3.3 height at withers

males
females
castrated males
unspecified

22.3.4 free format field for data on other body measurements [Enter data in the same way as for the measurements specified above.]

22.4 Carcass characters

[Each character can be recorded at up to 4 ages, as with body measurements.]

			Age	N	Mean	SD	Range
22.4.1	weight						
	22.4.1.l	hot					
		males	-	-	-	-	-
		females					
		castrated males					
		unspecified					
	22.4.1.2	cold					
		males					
		females					
		castrated males					
		unspecified					
22.4.2	length						
		males	-	-	-	-	-
		females					
		castrated males					
		unspecified					
22.4.3	dressing percentage		Age	N	Mean	SD	Range
	22.4.3.1	hot					
		males	-	-	-	-	-
		females					
		castrated males					
		unspecified					
	22.4.3.2	cold					
		males					
		females					
		castrated males					
		unspecified					
	22.4.3.3	not specified if hot or cold					
		males					

		females					
		castrated males					
		unspecified					
22.4.4	hide percentage		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
22.4. 5	meat:bone ratio		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
22.4.6	hindquarter:forequarter ratio		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
22.4.7	rib-eye area [Specify rib/vertebra number.]		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
22.4.8.	fat thickness (mm) [subcutaneous, specify site]		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
22.4.9	lean percentage		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
22.4.10	fat percentage		-	-	-	-	-
		males					
		females					
		castrated males					
		unspecified					
			Age	N	Mean	SD	Range
22.4.11	bone percentage		-	-	-	-	-
		males					
		females					
		castrated males					

unspecified

22.4.12 free format field for other carcass characters

22.5 Dairy performance

22.5.1 milking system

22.5.1.1 hand milking with calf

22.5.1.2 hand milking without calf

22.5.1.3 machine milking with calf

22.5.1.4 machine milking without calf

22.5.1.5 mixed (combination of the above; specify which)

22.5.1.6 other system (specify)

22.5.1.7 daily milking frequency

22.5.2 milk let-down

22.5.2.1 % of 1st lactation cows failing to let down milk in absence of the calf

22.5.2.2 % of lactations of 120 days or less

		N	Mean	SD	Range
22.5.3	total lactation milk yield	-	-	-	-
22.5.3.1	first lactation				
22.5.3.2	second lactation				
22.5.3.3	third lactation				
22.5.3.4	fourth or later lactation				
22.5.3.5	all lactations				
22.5.4	305-day milk yield	-	-	-	-
22.5.4.1	first lactation				
22.5.4.2	second lactation				
22.5.4.3	third lactation				
22.5.4.4	fourth or later lactation				
22.5.4.5	all lactations				
22.5.5	daily milk yield	-	-	-	-
22.5.5.1	first lactation				
22.5.5 2	second lactation				
22.5.5.3	third lactation				
22.5.5.4	fourth or later lactation				
22.5.5.5	all lactations				
22.5.6	milk yield per day of calving interval	-	-	-	-
22.5.6.1	first lactation				
22.5.6.2	second lactation				
22.5.6.3	third lactation				
22.5.6.4	fourth or later lactation				
22.5.6.5	all lactations				
22.5.7	milk fat yield	-	-	-	-
22.5.7.1	first lactation				
22.5.7.2	second lactation				
22.5.7.3	third lactation				

22.5.7.4 fourth or later lactation
22.5.7.5 all lactations

		N	Mean	SD	Range
22.5.8	milk protein yield	-	-	-	-
22.5.8.1	first lactation				
22.5.8.2	second lactation				
22.5.8.3	third lactation				
22.5.8.4	fourth or later lactation				
22.5.8.5	all lactations				

22.5.9 milk fat percentage [M = lactation month in which recorded; F = frequency of recording]

		M	F	N	Mean	SD	Range
22 5.9.1	first lactation	-	-	-	-	-	-
22.5.9.2	second lactation						
22.5.9.3	third lactation						
22.5.9.4	fourth or later lactation						
22.5.9.5	all lactations						
22.5.10	milk protein percentage	-	-	-	-	-	-
22.5.10.1	first lactation						
22.5.10.2	second lactation						
22.5.10.3	third lactation						
22.5.10.4	fourth or later lactation						
22.5.10.5	all lactations						
22.5.11	SNF percentage	-	-	-	-	-	-
22.5.11.1	first lactation						
22.5.11.2	second lactation						
22.5.11.3	third lactation						
22.5.11.4	fourth or later lactation						
22.5.11.5	all lactations						
22.5.12	milking rate (kg/min)	-	-	-	-	-	-
22.5.12.1	first lactation						
22.5.12.2	second lactation						
22.5.12.3	third lactation						
22.5.12.4	fourth or later lactation						
22.5.12.5	all lactations						
22.5.13	lactation duration (days)	-	-	-	-	-	-
22.5.13.1	first lactation						
22.5.13.2	second lactation						
22.5.13.3	third lactation						
22.5.13.4	fourth or later lactation						
22.5.13.5	all lactations						

22.5.14 persistency of lactation

free format field [specify which measure of persistency is being used.]

	N	Mean	SD	Range

22.5.15 productive lifespan (months) - - - -
22.5.16 feed conversion for milk [free format field]

22.6 Type of work
22.6.1 ploughing
paddy
dry land
22.6.2 haulage
22.6.3 back-packing
22.6.4 power (i.e. for pumping, milling, etc.)
22.6.5 free format field for work

22.7 Reproduction
22.7.1 sexual maturity of males (days) N Mean SD Range
22.7.1.1 age at 1st ejaculation - - - -
22.7.1.2 age at 1st mating
22.7.2 sexual maturity of females (days)
22.7.2.1 age at 1st oestrus
22.7.2.2 age at 1st ovulation
22.7.2.3 age at 1st mating
22.7.2.4 body weight at first oestrus
22.7.3 oestrous cycle - - - -
22.7.3.1 cycle duration (days)
22.7.3.2 oestrus duration (hours)
22.7.3.3 seasonality [% of females in oestrus in each calendar month]
22.7.3.4 synchronisation practised
yes
no
22.7.3.5 interval from calving - - - -
to 1st oestrus
22.7.3.6 detection method
herdsman
teaser
entire male
electrical resistance of vaginal mucus/mucosa
other (specify)
22.7.4 fertility and fecundity
22.7.4.1 conception rate (%)
AI
natural service
AI + natural service
22.7.4.2 number of services per conception
AI
natural service
AI + natural service
22.7.4.3 number of services per calving
AI

natural service
AI + natural service

22.7.4.4 interval from calving to conception (days)
22.7.4.5 calving interval (days)
22.7.4.6 calving percentage
22.7.4.7 twinning percentage

22.7.5 gestation length (days) - - - -

22.7.6 dystocia
22.7.6.1 % of manually assisted calvlngs
22.7.6.2 % of caesarian births
22.7.5.3 % of embryotomies

22.7.7 placental retention
% of manual removals

22.7.8 semen
22.7.8.1 inherited sperm abnormalities
[free format field for description and data]
22.7.8.2 other characters [free format field]

22.7.9 prenatal mortality
22.7.9.1 embryo (%)
22.7.9.2 abortion (%)
22.7.9.3 stillbirths (%)

2.7.10 reproductive disorders [free format field]
22.7.10.1 non-infectious [Give name and frequency of each.]
22.7.10.2 infectious
[Give name and frequency of each.]

22.8 Postgestational mortality
22.8.1 preweaning (%)
22.8.2 postweaning (%) - specify period

23. Physiology
23.1 Reaction to solar radiation
23.1.1 relative increase due to exposure (%)
23.1.1.1 rectal temperature (males)
age (months)
duration of exposure (hours)
mean
SD
range
23.1.1.2 rectal temperature (females)
age
duration of exposure
mean
SD
range
23.1.1.3 pulse rate (males)
age
duration of exposure

mean
SD
range

23.1.1.4 pulse rate (females)

age
duration of exposure
mean
SD
range

23.1.1.5 respiration rate (males)

age
duration of exposure
mean
SD
range

23.1.1.6 respiration rate (females)

age
duration of exposure
mean
SD
range

23.1.1.7 environmental factors during the test

	Mean	SD	Range
air temperature (degrees C)			
before stress			
during stress			
relative humidity (%)			
before stress			
during stress			
wind velocity (m/s)			
before stress			
during stress			

23.2 Reaction to climate chamber stress

23.2.1 relative increase due to exposure (%)

23.2.1.1 rectal temperature (males)

age
duration of exposure
mean
SD
range

23.2.1.2 rectal temperature (females)

age
duration of exposure
mean
SD

range

23.2.1.3 pulse rate (males)

age

duration of exposure

mean

SD

range

23.2.1.4 pulse rate (females) age

age

duration of exposure

mean

SD

range

23.2.1.5 respiration rate (males)

age

duration of exposure

mean

SD

range

23.2.1.6 respiration rate (females)

age

duration of exposure

mean

SD

range

23.2.1 7 environmental factors during test

	Mean	SD	Range
air temperature	-	-	-
before stress			
during stress			
relative humidity			
before stress			
during stress			

24. Genetic parameters

		Value	SE	Range
24.1	Heritability			
24.1.1	trait 1	-	-	-

[SE = standard error]

24.l.n trait n

24.2 Repeatability

24.2.1 trait 1

24.2.n trait n

24.3 Genetic correlation

(1) between .... and	-	-	-
(n) between .... and	-	-	-

24.4 Other genetic parameters [free format field]

24.5 Inbreeding coefficient

25. Cytogenetics

25.1 Chromosome abnormalities

25.1.1 translocations
[free format field; designation of translocation; frequency in population]

26. Inherited abnormalities
[free format field; give name, gene symbol (if relevant), and gene frequency when known)

27. Resistance to infectious diseases and parasites

27.1 Strain or breed comparisons

27.1.1 helminths, arthropods and protozoa
[free format field; specify comparative incidence and/or mortality, including faecal egg counts, tick resistance indices,etc.]

27.1.2 diseases due to agents other than in 27.1.1
[free format field; specify comparative incidence and/or mortality.]

DATA BANK FOR ANIMAL GENETIC RESOURCES: DESCRIPTOR LISTS SHEEP DESCRIPTORS

MASTER RECORD

1. Breed name
   [Use name in Mason's World Dictionary of Livestock Breeds. Types and Varieties. if the breed is given in the dictionary.]
2. Breed name synonyms
3. Strains (or within-breed types)
4. Use
   - 4.1 Fibre
   - 4.2 Meat
   - 4.3 Milk
   - 4.4 Skins
   - 4.5 Fur (lambskins)
   - 4.6 Transport
   - 4.7 Manure
   - 4.8 Other (specify)
5. General information and breed description
   - 5.1 Country and population data
     - 5.1.1 [country name 1] Give date of census or estimate]
       - 5.1.1.1 population size
       - 5.1.1.2 census data [Categories 5.1.1.2 to 5.1.1.4 are for indicating by "Y" the
       - 5.1.1.3 estimated value type of population data.]
       - 5.1.1.4 unspecified
       - 5.1.1.5 annual population trend *+%;-%;* unknown
       - 5.1.1.6 flock sizes

government farms

mean
range

% of total population

distribution %
1-10 animals
11-50
51-100
101-200
>200

commercial flocks

mean
range

% of total population

distribution %
1-10 animals
11-50
51-100
101-200
>200

village flocks

mean
range

% of total population

distribution %
1-10 animals
11-50
51-100
101-200
>200

communally owned flocks

mean
range

% of total population

distribution %
1-10 animals
11-50
51-100
101-200
>200

5.1.1.7 Management of non-government flocks

stationary [Give % of population on each type of
transhumant management]
nomadic

5.1.1.8 Grazing method of non-government flocks

extensive (shepherded flocks)
extensive (fenced) [Give % on each type]
zero (cut and carry)
intensive (combined with cropping)

5.1.1.9 Housing of non-government sheep [Give % of each type, and months of housing]

no housing
penned at night without shelter
housed only at night
housed at night and part of day
housed day and night

5.1.1.10 Percentage of sheep run together with goats

5.1.1.11 Nutrition

native pastures [Give % of sheep on each]

improved pastures

supplementary feeding (state type)

5.1.1.12 Number of shearings per year

government flocks

commercial flocks

village flocks

5.1.1.13 Mating methods in non-government flocks [Give % of sheep on each category.]

rams continually with ewes - uncontrolled mating

rams continually with ewes but mating prevented except at specified times

rams separated from ewes except at specified times

hand mating

AI

AI followed by natural or hand mating

other (specify)

5.1.1.14 Number of mating periods per year

5.1.1.15 origin of breed

indigenous

exotic

5.1.2 [country name 2]

. . . . .

5.1.n [country name n]

5.2 Colour

[Fill in fixed format fields, or write description in the free format description field, or do both.]

5.2.1 colour 1 [name]

% of surface area [range of values permissible]

males

females

sexes not separated

5.2.2 colour 2

% of surface area

males

females

sexes not separated

5.2.3 colour 3

% of surface area

males

females

sexes not separated

5.2.4 presence or absence of pigment
- 5.2.4.1 % of flock without any pigment
- 5.2.4.2 % with pigmented points
- 5.2.4.3 % with pigment in body area

5.2.5 distinctive colour markings [free format field]

5.3 Head

5.3.1 profile [% in each category]
- 5.3.1.1 straight
  - males
  - females
- 5.3.1.2 slightly convex
  - males
  - females
- 5.3.1.3 markedly convex (Roman nose)
  - males
  - females

5.4 Ears
- 5.4.1 erect (prick ears)
- 5.4.2 pendulous
- 5.4.3 semi-pendulous
- 5.4.4 carried horizontally
- 5.4.5 absent [Give % of earless animals]

5.5 Wattles [% in each category]

5.5.1 sometimes present
- males
- females

5.5.2 always present
- males
- females

5.6 Horns [For 5.6.1 to 5.6.4 give % of sheep in each category]

5.6.1 number
- males [indicate absence by 0]
- females

5.6.2 shape
- 5.6.2.1 scurs
  - males
  - females
- 5.6.2.2 straight (approximately)
  - males
  - females
- 5.6.2.3 curved
  - males
  - females

5.6.2.4 spiral
males
females
5.6.2.5 corkscrew
males
females

5.6.3 orientation
5.6.3.1 lateral
males
females
5.6.3.2 obliquely upward
males
females
5.6.3.3 backwards
males
females

5.6.4 size
5.6.4.1 small (<15 cm)
males
females
5.6.4.2 medium (15-25 cm)
males
females
5.6.4.3 large (>25 cm)
males
females

5.7 Coat

5.7.1 type
5.7.1.1 hair (no usable wool)
5.7.1.2 wool
no medullated fibres
<20% of medullated fibres
20-40% of medullated fibres
>40% of medullated fibres

5.7.2 length (12-month fleece)
5.7.2.1 short (<5 cm)
5.7.2.2 medium (5 to =<10 cm)
5.7.2.3 long (=>10 cm)

5.7.3 lustre
5.7.3.1 lustrous
5.7.3.2 non-lustrous

5.7.4 crimp/curl
5.7.4.1 straight
adult coat
lamb coat

5.7.4.2 low crimp frequency (< 4/cm)
adult coat
lamb coat
5.7.4.3 high crimp frequency (> 4/cm)
adult coat
lamb coat
5.7.5 fineness (overall average fibre diameter)
5.7.5.1 fine (< 21 micrometres)
5.7.5.2 medium (22-26 micrometres)
5.7.5.3 coarse (> 26 micrometres)
5.7.6 wool cover [Give % of sheep in each category]
5.7.6.1 head
covered
bare
5.7.6.2 face
covered
partly covered (to level of eyes)
bare
5.7.6.3 belly
covered
bare
5.7.6.4 legs
covered to hocks
covered to below hocks
bare

5.8 Beard
5.8.1 present
males [Give % in each category]
females

5.9 Tail
5.9.1 type
5.9.1.1 thin (wool covered)
males
females
5.9.1.2 thin (bare; rat tail)
males
females
5.9.1.3 fat rump with short appendage
males
females
5.9.1.4 fat rump without short appendage
males
females
5.9.1.5 semi-fat (thick at base)
males

females

5.9.1.6 fat

males

females

5.9.2 shape of fat tail

5.9.2.1 cylindrical and straight

males

females

5.9.2.2 cylindrical, turned up at end

males

females

5.9.2.3 bi-lobed, no appendage

males

females

5.9.2.5 broad, without lobes

males

females

5.9.3 length (undocked)

5.9.4.1 short (well above hocks)

males

females

5.9.4.2 medium (at or near hocks)

males

females

5.9.4.3 long (well below hocks)

males

females

5.10 Ruff on brisket and shoulder

5.10.1 present [Give % in each category]

males

females

5.11 Basic temperament

males

docile

moderately tractable

wild

females

docile

moderately tractable

wild

5.12 Conservation status

5.12.1 endangered

5.12.2 vulnerable

5.12.3 rare

5.12.4 indeterminate

5.12.5 out of danger

5.12.6 insufficiently known

5.12.7 not at risk (none of the above)

The first six of these categories are used by the International Union for the Conservation of Nature and Natural Resources. Their definitions, slightly amended, are as follows.

Endangered: Breeds in danger of extinction, and whose survival is unlikely if the causal factors continue operating.

Vulnerable: Breeds likely to move into the Endangered category in the near future if the causal factors continue operating.

Rare: Breeds with small populations that are not at present Endangered or Vulnerable, but are at risk.

Indeterminate: Breeds known to be Endangered. Rare or Vulnerable, but where there is not enough information to say which of the three categories is appropriate.

Out of Danger: Breeds formerly included in one of the above categories, but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has been removed.

Insufficiently Known: Breeds that are suspected but not definitely known to belong to any of the above categories, because of lack of information.

5.13 Drought tolerance

[Allocate grades 1-5; l=high]

5.14 Heat tolerance

[Allocate grades 1-5; l=high]

5.15 Free format breed description field

[A description of breed characters may be entered here instead of the fixed fields of sections 5.2 to 5.11. or material may be added to supplement the fixed fields.]

6. Master record prepared by:
   - 6.1 Name:
   - 6.2 Title: [Dr, Mr, Miss, etc.]
   - 6.3 Address:
   - 6.4 Affiliation: [Organisation, Company, Consultant, etc.]
   - 6.5 Date of preparation:
7. Master record updating or editing
   - 7.1 First amendment by:
     - 7.1.1 Name:
     - 7.1.2 Title:
     - 7.1.3 Address:
     - 7.1.4 Affiliation:
     - 7.1.5 Date of amendment:

     . . . . .

     . . . . .

     . . . . .

     - 7.n Nth amendment by:
       - 7.n.1 Name:
       - 7.n.2 Title:
       - 7.n.3 Address:
       - 7.n.4 Affiliation:

7.n.5 Date of amendment

SLAVE RECORD

1. Breed name of MASTER record
2. Breed crossbred type of SLAVE record[Give exact composition if possible, e.g. 75% Dorset Horn- 2 5% Somali]
3. Strain (or distinct within-breed type)
4. Period of data

   year month day [e.g. 1982:05:14]

   From

   To
5. Data form prepared by:
   - 5.1 Name:
   - 5.2 Title: [Dr, Mr, Miss, etc.]
   - 5.3 Address:
   - 5.4 Affiliation: [Organisation, Company, Consultant, etc.]
   - 5.5 Date of preparation:
6. Bibliographical reference of source document
   [pointer to the reference stored in the bibliographical file]
7. Data type and analysis
   - 7.1 Data
     - 7.1.1 unadjusted data
     - 7.1.2 data adjusted for environmental or other factors*
     - 7.1.3 survey data

       *[adjusted by the author of the original paper or document]
   - 7.2 Treatment of data
     - 7.2.1 descriptive
     - 7.2.2 analytical
     - 7.2.3 none
8. Reliability code
   [Grade data subjectively on a scale of 1 to 5; l=highly reliable, 5=low reliability.]
9. Country [in which data were recorded or experiment carried out, etc.]
   - 9.1 country subdivision(s) [province, county, district, etc]
10. Terrestrial environment [See Glossary for definitions.]
    - 10.1 Tropical rainforest
    - 10.2 Tropical deciduous forest
    - 10.3 Tropical scrub forest
    - 10.4 Tropical savannah
    - 10.5 Desert
    - 10.6 Mediterranean woodland and scrub
    - 10.7 Middle latitude grassland
      - 10.7.1 highland grass
      - 10.7.2 moorland
      - 10.7.3 marshland
    - 10.8 Middle latitude deciduous forest

10.9 Coniferous forest
10.10 Tundra
10.11 Free format terrestrial environment field
[Include information on problems associated with vegetation, e.g. toxic plants]

11. Elevation and topography
11.1 Elevation
mean
range
11.2 Topography
[Free format field. The description should include the following items, when information on them is available: roughness of terrain; slope; nature of surface (rocky, sandy, stony, etc.); surface drainage (poor, seasonally wet, well drained, etc.)]

12. Climate
12.1 Rainfall (mm)
12.1.1 annual precipitation
mean
range
12.1.2 seasonality
12.1.2.1 non-seasonal
12.1.2.2 seasonal
[input as, e.g. 05-07. meaning May to July
12.1.3 free format rainfall data
12.2 Temperature (degrees C)
12.2.1 average annual temperature
mean of several years
range of several years
12.2.2 av.monthly maximum temperature in year
mean maximum of several years
range of several years
month(s) of maximum temperature
12.2.3 av. monthly minimum temperature in year
mean minimum of several years
range of several years
month(s) of minimum temperature
12.2.4 free format temperature data
12.3 Relative humidity (RH)
12.3.1 average annual RH
mean of several years
range of several years
12.3.2 maximum RH in year
mean maximum of several years
range of several years
month(s) of maximum temperature
12.3.3 minimum RH in year
mean minimum of several years

range of several years
month(s) of minimum temperature

12.3.4 free format RH data

13. Socio-management system
    - 13.1 Stationary domicile
        - 13.1.1 extensive management
            - 13.1.1.1 peasant flocks
            - 13.1.1.2 commercial ranching
        - 13.1.2 village flocks (smallholdings)
        - 13.1.3 intensive management
            - 13.1.3.1 grassland-based
            - 13.1.3.2 arable-associated
    - 13.2 transhumance
    - 13.3 nomadism
      [See Glossary for definitions.]
    - 13.4 Free format field for socio-management system
14. Type of farm
    - 14.1 Peasant agriculture
    - 14.2 Breeding centre
    - 14.3 Commercial production unit
    - 14.4 Experiment station
    - 14.5 Field experiment
    - 14.6 Multiplication unit
    - 14.7 Other (specify)
    - 14.8 Free format field for farm type
15. Degree of management supervision
    - 15.1 Advisory services
    - 15.2 Resident professional supervision
    - 15.3 Supervision by scientific staff of investigation project
    - 15.4 None
16. Mating
    - 16.1 Mating methods in flocks
        - 16.1.1 rams continually with ewes - uncontrolled mating
        - 16.1.2 rams continually with ewes but mating prevented except at specified times
        - 16.1.3 rams separated from ewes except at specified times
        - 16.1.4 hand mating
        - 16.1.5 AI
            - fresh semen
            - frozen semen
            - fresh and frozen semen
        - 16.1.6 AI followed by natural or hand mating
            - fresh semen
            - frozen semen

fresh and frozen semen

16.1.7 other (specify)

16.2 Mating ratio

16.2.1 number of females per male in natural mating

16.2.2 number of females per male in hand mating

16.2.3 number of females per male in AI

16.3 Mating period

16.3.1 number of days males are put with females in natural mating

16.3.2 number of mating periods per year

17. Flock size

17.1 Number of breeding ewes

17.2 Number of bred hoggets

17.3 Number of replacement females (weaning to transfer into breeding flock)

17.4 Number of rams used for breeding

17.5 Number of reserve rams

17.6 Number of lambs (birth to weaning)

17.7 Number of postweaners for meat production

17.8 Percentage of breeding ewes that are milked annually

18. Nutrition

18.1 Grazing

18.1.1 method

18.1.1.1 zero grazed

18.1.1.2 extensively in a shepherded flock

18.1.1.3 fenced

18.1.1.4 strip grazed

18.1.2 pasture classification

18.1.2.1 unimproved

18.1.2.2 improved

18.1.3 water supply of pasture

18.1.3.1 rainfed

18.1.3.2 irrigated

18.1.4 dominant grass species

18.1.4.1 species 1 [give botanical name]

% of sward

18.1.4.2 species 2

% of sward

. . . . .

. . . . .

. . . . .

18.1.4.n species n

% of sward

18.1.5 legume species

18.1.5.1 species 1

% of sward

18.1.5.2 species 2

% of sward

. . . . .
. . . . .
. . . . .

18.1.5.n species n

% of sward

18.2 Fodder crops
- 18.2.1 cut green fodder
- 18.2.2 hay
- 18.2.3 silage
- 18.2.4 other (specify)
- 18.2.5 free format field for amounts fed

18.3 Concentrates
- 18.3.1 ingredients
  - 18.3.1.1 ingredient 1 [name]

    % of concentrate diet
  - 18.3.1.2 ingredient 2

    % of concentrate diet

    . . . . .
    . . . . .
    . . . . .
  - 18.3.l.n ingredient n

    % of concentrate diet
- 18.3.2 free format field for amounts of concentrates fed

  [For 18.2.5 and 18.3.2, as a minimum entry specify whether feeding is ad-lib, or not ad-lib.]

18.4 Water
- 18.4.1 sufficient to meet requirements
- 18.4.2 supply inadequate

  [Specify months in which supply is inadequate, e.g. 03 to 05.]

18.5 Minerals
- 18.5.1 supply adequate
  - 18.5.1.1 supplements not fed
  - 18.5.1.2 supplements fed
- 18.5.2 supply inadequate
  - 18.5.2.1 supplements not fed
  - 18.5.2.2 supplements fed

18.6 Seasonality of nutrition
- 18.6.1 feeding adequate all year round
- 18.6.2 feeding inadequate in some months (specify)

18.7 lamb feeding
- 18.7.1 suckling plus grazing
- 18.7.2 milk replacer after early weaning

18.8 type of weaning
- 18.8.1 abrupt

18.8.1.1 age at weaning
18.8.2 partial
18.8.2.1 age at start of weaning
18.8.2.2 age at completion of weaning

19. Housing
19.1 Provided [Indicate if for whole year or only some months]
19.1.1 only at night
19.1.2 at night and for part of day
19.1.3 day and night
19.1.4 for part of day
19.1.5 type of housing (specify)
19.2 Not provided

Diseases and parasites

20. [Free format field for noting any diseases prevalent at the time that performance data were recorded.]

Measures against diseases and parasites

21. [Free format field for recording prophylactic measures: in particular, dipping, anthelmintic dosing and vaccination.]

22. Performance
22.1 Body weight
[Give all weights in kg; N = number of observations; SD standard deviation; males = entire males.]

				N	Mean	SD	Range
22.1.1	birth			-	-	-	-
		males					
			singles				
			twins				
			=> triplets				
			overall				
		Females					
			singles				
			twins				
			=> triplets				
			overall				
		unspecified					
			singles				
			twins				
			=> triplets				
			overall				

				Age	N	Mean	SD	Range
22.1.2	preweaning							
		males		-	-	-	-	-
			singles					
			twins					

		=> triplets					
		overall					
		Females					
		singles					
		twins					
		=> triplets					
		overall					
		castrated males					
		singles					
		twins					
		=> triplets					
		unspecified					
		overall					
		singles					
		twins					
		=> triplets					
		overall					
		[Repeat the sex groups for each age at which data are recorded.]					
22.1.3	weaning		Age	N	Mean	SD	Range
		males	-	-	-	-	-
		singles					
		twins					
		=> triplets					
		overall					
		Females					
		singles					
		twins					
		=> triplets					
		overall					
		castrated males					
		singles					
		twins					
		=> triplets					
		unspecified					
		singles					
		twins					
		=> triplets					
		overall					
		[Repeat the sex groups for each age at which data are recorded.]					
22.1.4	postweaning		-	-	-	-	-
		males					
		singles					

		twins					
		=> triplets					
		overall					
	Females						
		singles					
		twins					
		=> triplets					
		overall					
	castrated males						
		singles					
		twins					
		=> triplets					
	unspecified						
		singles					
		twins					
		=> triplets					
		overall					
		[Repeat the sex groups for each age at which data are recorded.]					
22.1.5	slaughter		Age	N	Mean	SD	Range
	males		-	-	-	-	-
		singles					
		twins					
		=> triplets					
		overall					
	Females						
		singles					
		twins					
		=> triplets					
		overall					
	castrated males						
		singles					
		twins					
		=> triplets					
	unspecified						
		singles					
		twins					
		=> triplets					
		overall					
		[Repeat the sex groups for each age at which data are recorded. Specify if fasted (F), not fasted (NF), or fasting status unknown (U).]					
22.1.6	first mating		-	-	-	-	-
	males						

females

22.1.7 first lambing - - - - -

22.1.8 maturity and postmaturity

ewes

rams

wethers

22.1.9 free format field for ages not specified in 22.1.1 to 22.1.8

22.2 Average daily gain (g)	N	Mean	SD	Range
22.2.1 preweaning				
22.2.1.1 unspecified age range				
males	-	-	-	-
singles				
twins				
=> triplets				
overall				
Females				
singles				
twins				
=> triplets				
overall				
castrated males				
singles				
twins				
=> triplets				
unspecified				
singles				
twins				
=> triplets				
overall				
22.2.1.2 age range 1 (specify)	N	Mean	SD	Range
males				
singles				
twins				
=> triplets				
overall				
Females				
singles				
twins				
=> triplets				
overall				
castrated males				
singles				
twins				

=> triplets
unspecified
singles
twins
=> triplets
overall
. . . . .
. . . . .
. . . . .

22.2.1.n age range n

males	-	-	-	-
singles				
twins				
=> triplets				
overall				
Females				
singles				
twins				
=> triplets				
overall				
castrated males				
singles				
twins				
=> triplets				
unspecified				
singles				
twins				
=> triplets				
overall				

22.2.2 postweaning	N	Mean	SD	Range
22.2.2.1 unspecified age range	-	-	-	-
males				
singles				
twins				
=> triplets				
overall				
Females				
singles				
twins				
=> triplets				
overall				
castrated males				
singles				
twins				

=> triplets
unspecified
singles
twins
=> triplets
overall

22.2.2.2 age (or weight) range 1 (specify)
males
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles
twins
=> triplets
overall

22.2.2.n age (weight) range n
[as for age range 1]

22.2.3 feed conversion for growth
[free format field]

22.3 Body measurement	Age	N	Mean	SD	Range
22.3.1 chest girth					
males	-	-	-	-	-
singles					
twins					
=> triplets					
overall					
Females					
singles					
twins					
=> triplets					
overall					
castrated males					
singles					

twins
=> triplets
unspecified
singles
twins
=> triplets
overall
[Up to 4 ages can be recorded for all body measurements, repeating the sex classes required,]

22.3.2 body length
males - - - - -
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles
twins
=> triplets
overall

22.3.3 height at withers
males - - - - -
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified

singles
twins
=> triplets
overall

22.3.4 free format field for data on other body measurements
[Enter data in the same way as for the measurements specified above.]

22.4 Carcass characters
[Each character can be recorded at up to 4 ages, as with body measurements.]

				Age	N	Mean	SD	Range
22.4.1	weight							
	22.4.1.1	hot						
			males	-	-	-	-	-
			singles					
			twins					
			=> triplets					
			overall					
			Females					
			singles					
			twins					
			=> triplets					
			overall					
			castrated males					
			singles					
			twins					
			=> triplets					
			unspecified					
			singles					
			twins					
			=> triplets					
			overall					
	22.4.1.2	cold						
			males					
			singles					
			twins					
			=> triplets					
			overall					
			Females					
			singles					
			twins					
			=> triplets					
			overall					
			castrated males					
			singles					
			twins					

=> triplets
unspecified
singles
twins
=> triplets
overall

22.4.2 length

males - - - - -
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles
twins
=> triplets
overall

22.4.3 dressing percentage Age N Mean SD Range

22.4.3.1 hot

males - - - - -
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles

twins
=> triplets
overall

22.4.3.2 cold

males
singles
twins
=> triplets
overall

Females
singles
twins
=> triplets
overall

castrated males
singles
twins
=> triplets

unspecified
singles
twins
=> triplets
overall

22.4.4 skin percentage - - - -
males
females
castrated males
unspecified

22.4.5 meat: bone ratio
males - - - - -
singles
twins
=> triplets
overall

Females
singles
twins
=> triplets
overall

castrated males
singles
twins
=> triplets

unspecified
singles

twins
=> triplets
overall

22.4.6 loin-eye area

[Specify vertebra number.]
males - - - - -
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles
twins
=> triplets
overall

22.4.7 fat thickness (mm) - - - - -

[subcutaneous, specify site]
males
singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles
twins
=> triplets

overall

22.4.8 lean percentage - - - - -

males

singles

twins

=> triplets

overall

Females

singles

twins

=> triplets

overall

castrated males

singles

twins

=> triplets

unspecified

singles

twins

=> triplets

overall

22.4.9 fat percentage

males - - - - -

singles

twins

=> triplets

overall

Females

singles

twins

=> triplets

overall

castrated males

singles

twins

=> triplets

unspecified

singles

twins

=> triplets

overall

		Age	N	Mean	SD	Range
22.4.10	bone percentage					
	males	-	-	-	-	-

singles
twins
=> triplets
overall
Females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
unspecified
singles
twins
=> triplets
overall

22.4.11 free format field for other carcass characters

22.5 Reproduction

			N	Mean	SD	Range
22.5.1	sexual maturity of males (days)					
	22.5.1.1	age at 1st ejaculation	-	-	-	-
	22.5.1.2	age at 1st mating				
22.5.2	sexual maturity of females (days)					
	22.5.2.1	age at 1st oestrus				
	22.5.2.2	age at 1st ovulation				
	22.5.2.3	age at 1st mating				
	22.5.2.4	age at 1st lambing				
22.5.3	oestrous cycle					
	22.5.3.1	cycle duration (days)	-	-	-	-
	22.5.3.2	oestrus duration (hours)				
	22.5.3.3	seasonality				
		number of oestrous				
		months per year	-	-	-	-
		period(s) e.g. months 09 to 11.				
	22.5.3.4	detection method				
		teaser				
		entire male				
		other (specify)				
	22.5.3.5	number of ewes normally mated in flock (give mean and range only)				
22.5.4	lambing					

22.5.4.1	number of ewes exposed to rams	-	-	-	-
	1st parity				
	2nd parity				
	=>3rd parity				
	all parities				
22.5.4.2	% of ewes exposed which gave gave birth to the specified numbers of lambs (alive + stillborn)	-	-	-	-
	1st parity				
	0				
	1				
	2				
	=>3				
	2nd parity				
	0				
	1				
	2				
	=>3				
	3rd parity				
	0				
	1				
	2				
	=>3				
	all parities	-	-	-	-
	0				
	1				
	2				
	=>3				
22.5.4.3	number of lambs born (live + stillborn) per ewe exposed				
	1st parity	-	-	-	-
	2nd parity				
	=>3rd parity				
	all parities				
22.5.4.4	litter size (live + stillborn)				
	1st parity	-	-	-	-
	2nd parity				
	=>3rd parity				
	all parities				
22.5.4.5	% of lambing ewes with the specified numbers of live lambs at weaning				
	1st parity	-	-	-	-
	0				
	1				

2
=>3
2nd parity
0
1
2
=>3
3rd parity
0
1
2
=>3
all parities - - - -
0
1
2
=>3

22.5.4.6 number of lambs weaned per ewe exposed
1st parity - - - -
2nd parity
=>3rd parity
all parities

22.5.4.7 lambing interval (days) - -

22.5.4.8 lifetime number of matings

22.5.5 semen

22.5.5.1 inherited sperm abnormalities
[free format field for description and data]

22.5.5.2 other characters
[free format field]

22.5.6 reproductive disorders [free format field]

22.5.6.1 non-infectious
[Give name and frequency of each.]

22.5.6.2 infectious
[Give name and frequency of each.]

22.6 Mortality N %

22.6.1 annual adult mortality - -
males
females

22.6.2 prenatal mortality

22.6.2.1 abortions - -

22.6.2.2 stillbirths
singles
twins
=>triplets
overall

22.6.3 preweaning mortality
(birth to weaning) - -
singles
twins
=>triplets
overall

22.7 Dairy performance

22.7.1 milking system

22.7.1.1 hand milking with lamb present
22.7.1.2 hand milking without lamb present
22.7.1.3 machine milking with lamb present
22.7.1.4 machine milking without lamb present
22.7.1.5 mixed (combination of the above; specify which)
22.7.1.6 other system (specify)
22.7.1.7 daily milking frequency
[Where relevant, state how long the lamb is with the ewe during a 24-hour period]
22.7.1.8 estimation method for yield of sucked milk

22.7.2 milk let-down

22.7.2.1 % of 1st lactation ewes failing to let down milk in absence of the lamb
22.7.2.2 % of lactations of 21 days or.less

		N	Mean	SD	Range
22.7.3	total lactation milk yield				
22.7.3.1	first lactation	-	-	-	-
	milked				
	sucked				
22.7.3.2	second lactation				
	milked				
	sucked				
22.7.3.3	third lactation				
	milked				
	sucked				
22.7.3.4	fourth or later lactation				
	milked				
	sucked				
22.7.3.5	all lactations				
	milked				
	sucked				
22.7.4	daily milk yield	-	-	-	-
22.7.4.1	first lactation				

milked
sucked

22.7.4.2 second lactation
milked
sucked

22.7.4.3 third lactation
milked
sucked

22.7.4.4 fourth or later lactation
milked
sucked

22.7.4.5 all lactations
milked
sucked

22.7.5 milk fat yield - - - -

22.7.5.1 first lactation

22.7.5.2 second lactation

22.7.5.3 third lactation

22.7.5.4 fourth or later lactation

22.7.5.5 all lactations

22.7.6 milk protein yield - - - -

22.7.6.1 first lactation

22.7.6.2 second lactation

22.7.6.3 third lactation

22.7.6.4 fourth or later lactation

22.7.6.5 all lactations

22.7.7 milk fat percentage [M = month in which recorded; F = frequency of recording]

		M	F	N	Mean	SD	Range
22.7.7.1	first lactation	-	-	-	-	-	-
22.7.7.2	second lactation						
22.7.7.3	third lactation						
22.7.7.4	fourth or later lactation						

22.7.7.5 all lactations

22.7.8	milk protein percentage	-	-	-	-	-	-
	22.7.8.1 first lactation						
	22.7.8.2 second lactation						
	22.7.8.3 third lactation						
	22.7.8.4 fourth or later lactation						
	22.7.8.5 all lactations						
22.7.9	SNF percentage	-	-	-	-	-	-
	22.7.9.1 first lactation						
	22.7.9.2 second lactation						
	22.7.9.3 third lactation						
	22.7.9.4 fourth or later lactation						
	22.7.9.5 all lactations						
22.7.10	milking rate (kg/min)	-	-	-	-	-	-
	22.7.10.1 first lactation						
	22.7.10.2 second lactation						
	22.7.10.3 third lactation						
	22.7.10.4 fourth or later lactation						
	22.7.10.5 all lactations						

22.7.11 lactation duration (days)

22.7.11.1 first lactation

22.7.11.2 second lactation

22.7.11.3 third lactation

22.7.12.4 fourth lactation

22.7.12.5 all lactations

22.7.12 persistency of lactation

free format field [specify which measure of persistency is being used.]

	N	Mean	SD	Range
22.7.13 productive lifespan (months)	-	-	-	-

22.7.14 feed conversion for milk
[free format field]

22.8 Wool production

22.8.1 processing type*

22.8.1.1 carpet wool

22.8.1.2 crossbred wool

22.8.1.3 Merino wool

[*see Glossary]

22.8.2 sampling

22.8.2.1 site

shoulder
mid-side
thigh

22.8.3 number of shearings per year

	Age	N	GP	Mean	SD	Range
22.8.4 Coat composition of adults*						
22.8.4.1 % of true wool	-	-	-	-	-	-
22.8.4.2 % of heterotypes						
22.8.4.3 % of Kemps						
22.8.4.4 % of hair						

[*see Glossary]

[GP = duration of wool growth period in months]

22.8.4.5 method of estimation

weight
count

22.8.5 greasy fleece weight

1st shearing

male singles	-	-	-	-	-	-
male multiples						
female singles						
female multiples						

later shearings

males (all)						
females (all)						

22.8.6 clean fleece weight

	Age	N	GP	Mean	SD	Range
1st shearing						
male singles	-	-	-	-	-	-
male multiples						
female singles						

female multiples
later shearings
males (all)
females (all)

22.8.7 clean fleece percentage
1st shearing
male singles
male multiples
female singles
female multiples
later shearings
males (all)
females (all)

22.8.8 staple length	Age	N	GP	Mean	SD	Range
1st shearing	-	-	-	-	-	-
male singles						
male multiples						
female singles						
female multiples						
later shearings						
males (all)						
females (all)						

22.8.9 fibre diameter		Age	N	Mean	SD	Range
22.8.9.1 true wool						
1st shearing		-	-	-	-	-
male singles						
male multiples						
female singles						
female multiples						
later shearings						
males (all)						
females (all)						
22.8.9.2 heterotypes						
1st shearing						
male singles						
male multiples						
female singles						
female multiples						
later shearings						
males (all)						
females (all)						
22.8.9.3 hair		Age	N	Mean	SD	Rang

e

1st shearing
male singles - - - - -
male multiples
female singles
female multiples
later shearings
males (all)
females (all)

22.8.9.4 kemps
1st shearing
male singles
male multiples
female singles
female multiples
later shearings
males (all)
females (all)

22.8.9.5 overall
1st shearing
male singles
male multiples
female singles
female multiples
later shearings
males (all)
females (all)

22.8.10 fleece colour

22.8.10.1 summer
white
yellow
wholly pigmented
partly pigmented

22.8.10.2 winter
white
yellow
wholly pigmented
partly pigmented

22.8.10.3 other season (specify)
white
yellow
wholly pigmented
partly pigmented

22.8.11 feed conversion for wool
[free format field]

22.9 Pelt production

22.9.1	breeds other than Karakul	N	Mean	SD	Range	
22.9.1.1	pelt weight					
	lambs					
	adults					
22.9.1.2	pelt length	-	-	-	-	
	lambs					
	adults					
22.9.1.3	pelt width					
	lambs					
	adults					
22.9.2	Karakuls					
22.9.2.1	pelt weight					
	foetus					
	lamb					
22.9.2.2	pelt length					
	foetus					
	lamb					
22.9.2.3	pelt width					
	lamb					
	foetus					
22.9.2.4	curl type					
	[free format field; systems differ between countries; follow terminology of data source]					
22.9.2.5	hair diameter (micrometres)	N	Mean	SD	Range	
	or					
	subjective evaluation					
	thin					
	medium					
	thick					
22.9.2.6	lustre					
	brilliant					
	normal					
	metallic					
	dull					
22.9.2.7	texture					
	woolly					
	soft					
	silky					
	elastic					
	normal					
	bulky					
	hard					

frizzy

23. Physiology
    23.1 Reaction to solar radiation
        23.1.1 relative increase due to exposure (%)
            23.1.1.1 rectal temperature (males)
                age (months)
                duration of exposure (hours)
                mean
                SD
                range
            23.1.1.2 rectal temperature (females)
                age
                duration of exposure
                mean
                SD
                range
            23.1.1.3 pulse rate (males)
                age
                duration of exposure
                mean
                SD
                range
            23.1.1.4 pulse rate (females)
                age
                duration of exposure
                mean
                SD
                range
            23.1.1.5 respiration rate (males)
                age
                duration of exposure
                mean
                SD
                range
            23.1.1.6 respiration rate (females)
                age
                duration of exposure
                mean
                SD
                range
            23.1.1.7 environmental factors during the test

	Mean	SD	range
air temperature (degrees C)			
before stress			

during stress
relative humidity (%)
before stress
during stress
wind velocity (m/s)
before stress
during stress

23.2 Reaction to climate chamber stress
23.2.1 relative increase due to exposure (%)
23.2.1.1 rectal temperature (males)
age
duration of exposure
mean
SD
range
23.2.1.2 rectal temperature (females)
age
duration of exposure
mean
SD
range
23.2.1.3 pulse rate (males)
age
duration of exposure
mean
SD
range
23.2.1.4 pulse rate (females)
age
duration of exposure
mean
SD
range
23.2.1.5 respiration rate (males)
age
duration of exposure
mean
SD
range
23.2.1.6 respiration rate (females)
age
duration of exposure
mean
SD
range

23.2.1.7 environmental factors during test

	Mean	SD	Range
air temperature	-	-	-
before stress			
during stress			
relative humidity			
before stress			
during stress			

24. Genetic parameters

			Estimate	SE	Range
24.1	Heritability				
24.1.1	trait 1		-	-	-
. . . .	[SE = standard error]				
. . . .					
. . . .					
24.1.n	trait n				
24.2	Repeatability				
24.2.1	trait 1				
. . . .					
. . . .					
. . . .					
24.2.n	trait n				
24.3	Genetic correlation				
(1) between .... and			-	-	-
(n) between .... and			-	-	-

24.4 Other quantitative genetic parameters

[free format field]

24.5 Inbreeding coefficient

25. Cytogenetics

25.1 Chromosome abnormalities

25.1.1 translocations

[free format field; designation of translocation; frequency in population]

26. Inherited abnormalities

[free format field for abnormalities;
give name, gene symbol (if relevant),
and gene frequency when known]

27. Resistance to infectious diseases and parasites

27.1 Strain or breed comparisons

27.1.1 helminths, arthropods and protozoa

[free format field; specify comparative incidence and/or mortality, including faecal egg counts, tick resistance indices,etc.]

27.1.2 diseases due to agents other than in 27.1.1

[free format field; specify comparative incidence and/or mortality.]

DATA BANK FOR ANIMAL GENETIC RESOURCES: DESCRIPTOR LISTS GOAT DESCRIPTORS

MASTER RECORD

Breed name

1. [Use name in Mason's World Dictionary of Livestock Breeds. Types and Varieties. if the breed is given in the dictionary.]
2. Breed name synonyms
3. Classification
   - 3.1 Short-eared with small or sabre horns or no horns
   - 3.2 Short-eared with twisted horns
   - 3.3 Long-eared, hornless goats
   - 3.4 Lop-eared, horned goats
   - 3.5 Angora, cashmere and pashmina goats
4. Strains (or within-breed types)
5. Use
   - 5.1 Hair
   - 5.2 Meat
   - 5.3 Milk
   - 5.4 Skins
   - 5.5 Fibre (mohair or cashmere/pashmina)
   - 5.6 Manure
   - 5.7 Other (specify)
6. General information and breed description
   - 6.1 Country and population data
     - 6.1.1 [country name 1] [Give date of census or estimate]
       - 6.1.1.1 population size
       - 6.1.1.2 census data
       - 6.1.1.3 estimated value [Categories 6.1.1.2 to 6.1.1.4 are for indicating by "Y" the the type of population data]
       - 6.1.1.4 unspecified
       - 6.1.1.5 annual population trend + %; -%; unknown
       - 6.1.1.6 herd sizes

government farm		
	mean	
	range	
	distribution 1-10 animals	%
	11-50	
	51-100	
	101-200	
	>200	
commercial farm		

mean
range
distribution 1-10 animals %
11-50
51-100
101-200
>200

village herds

mean
range
distribution 1-10 animals %
11-50
51-100
101-200
>200

communally owned herds

mean
range
distribution 1-10 animals %
11-50
51-100
101-200
>200

6.1.1.7 Management of non-government herds

stationary
transhumant
nomadic

[Give % of population on each type of management]

6.1.1.8 Grazing method of non-government herds

extensive (herded)
extensive (fenced)
zero
intensive (combined with cropping)

[Give % on each type]
(cut and carry)

6.1.1.9 Housing of non-government goats [Give % of each type, and months of housing]

no housing
penned at night without shelter
housed only at night
housed at night and part of day
housed day and night

6.1.1.10 Percentage of goats run together with sheep

6.1.1.11 Nutrition

native pastures
improved pastures

[Give % of goats on each]

supplementary feeding (state type)

6.1.1.12 Mating methods in non-government herds [Give % of goats in each category.]

bucks continually with does - uncontrolled mating
bucks continually with does but mating prevented except at specified times
bucks separated from does except at specified times
hand mating
AI
AI followed by natural or hand mating other (specify)

6.1.1.13 number of matins periods per year

6.1.1.14 origin of breed

indigenous
exotic

6.1.2 [country name 2]

6.1.n [country name n]

Colour

6.2 [Fill in fixed format fields, or write description in the free format description field, or do both.]

6.2.1 colour 1 [name]

% of surface area [range of values permissible]

males
females
sexes not separated

6.2.2 colour 2 of surface area

males
females
sexes not separated

6.2.3 colour 3 % of surface area

males
females
sexes not separated

6.2.4 distinctive colour markings

6.3 Head

6.3.1 profile

6.3.1.1 straight

males
females

6.3.1.2 slightly convex

males
females

6.3.1.3 markedly convex (Roman nose)

males

females

6.4 Ears
- 6.4.1 erect (prick ears)
- 6.4.2 pendulous
- 6.4.3 semi-pendulous
- 6.4.4 carried horizontally
- 6.4.5 absent [Give % of earless animals]

6.5 Wattles
- 6.5.1 sometimes present [% in each category]
  - males
  - females
- 6.5.2 always present
  - males
  - females

6.6 Horns
- 6.6.1 number
  - males [indicate absence by 0]
  - females
- 6.6.2 shape
  - 6.6.2.1 scurs
    - males
    - females
  - 6.6.2.2 straight (approximately)
    - males
    - females
  - 6.6.2.3 curved
    - males
    - females
  - 6.6.2.4 spiral or corkscrew
    - males
    - females
- 6.6.3 orientation
  - 6.6.3.1 lateral
    - males
    - females
  - 6.6.3.2 obliquely upward
    - males
    - females
  - 6.6.3.3 backwards
    - males
    - females
- 6.6.4 size
  - 6.6.4.1 small (<15 cm)
    - males
    - females

6.6.4.2 medium (15-25 cm)
males
females
6.6.4.3 large (>25 cm)
males
females

6.7 Coat
6.7.1 type
6.7.1.1 hair (no commercially exploitable undercoat
6.7.1.2 cashmere/pashmina/down (undercoat combed out)
6.7.1.3 mohair (the whole fleece)
6.7.2 fineness (overall average fibre diameter)
6.7.2.1 cashmere/pashmina/down
kid
adult
6.7.2.2 mohair
kid
adult

6.8 Beard
6.8.1 present [Give % of bearded animals]
males
females

6.9 Ruff on brisket and shoulder
6.9.1 present [Give % with ruff]
males
females

6.10 Basic temperament
males
docile
moderately tractable
wild
females
docile
moderately tractable
wild

6.11 Drought tolerance
[Allocate grades 1-5; l=high]

6.12 Heat tolerance
[Allocate grades 1-5; l=high]

6.13 Resistance to diseases and parasites
[Free format field; write word description]

6.14 Conservation status
6.14.1 endangered
6.14.2 vulnerable
6.14.3 rare

6.14.4 indeterminate
6.14.5 out of danger
6.14.6 insufficiently known
6.14.7 not at risk (none of the above)

The first six of these categories are used by the International Union for the Conservation of Nature and Natural Resources. Their definitions, slightly amended, are as follows.

Endangered: Breeds in danger of extinction, and whose survival is unlikely if the causal factors continue operating.

Vulnerable: Breeds likely to move into the Endangered category in the near future if the causal factors continue operating.

Rare: Breeds with small populations that are not at present Endangered or Vulnerable, but are at risk.

Indeterminate: Breeds known to be Endangered. Rare or Vulnerable. but where there is not enough information to say which of the three categories is appropriate.

Out of Danger: Breeds formerly included in one of the above categories, but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has. been removed.

Insufficiently Known: Breeds that are suspected but not definitely known to belong to any of the above categories, because of lack of information.

6.15 Free format breed description field

[A description of breed characters may be entered here instead of the fixed fields of sections 6.2 to 6.12, or material may be added to supplement the fixed fields.]

7. Master record prepared by:
7.1 Name:
7.2 Title: [D,. Mr, Miss, etc.]
7.3 Address:
7.4 Affiliation: [Organisation, Company, Consultant, etc.]
7.5 Date of preparation :

8. Master record updating or editing
8.1 First amendment by:
8.1.1 Name:
8.1.2 Title:
8.1.3 Address:
8.1.4 Affiliation:
8.1.5 Date of amendment:
8.n Nth amendment by:
8.n.1 Name:
8.n.2 Title:
8.n.3 Address:
8.n.4 Affiliation:
8.n.5 Date of amendment

SLAVE RECORD

1. Breed name of MASTER record
2. Breed/crossbred type of SLAVE record
   [Give exact composition if possible, e.g. 75% Malabar-25% Saanen.]
3. Strain (or distinct within-breed type)
4. Period of data
   year month day [e.g. 1982:05:14]
   From
   To
5. Data form prepared by:
   - 5.1 Name:
   - 5.2 Title: [Dr. Mr, Miss, etc.]
   - 5.3 Address:
   - 5.4 Affiliation: [Organisation, Company, Consultant, etc.]
   - 5.5 Date of preparation:
6. Bibliographical reference of source document
   [pointer to the reference stored in the bibliographical file]
7. Data type and analysis
   - 7.1 Data
     - 7.1.1 unadjusted data
     - 7.1.2 data adjusted for environmental or other factors*
     - 7.1.3 survey data

     *[adjusted by the author of the original paper or document]
   - 7.2 Treatment of data
     - 7.2.1 descriptive
     - 7.2.2 analytical
     - 7.2.3 none
8. Reliability code
   [Grade data subjectively on a scale of 1 to 5; l=highly reliable, 5=low reliability.]
9. Country [in which data were recorded or experiment carried out, etc.]
   - 9.1 country subdivision(s) [province, county, district, etc]
10. Terrestrial environment
    - 10.1 Tropical rainforest
    - 10.2 Tropical deciduous forest
    - 10.3 Tropical scrub forest
    - 10.4 Tropical savannah
    - 10.5 Desert
    - 10.6 Mediterranean woodland and scrub
    - 10.7 Middle latitude grassland
      - 10.7.1 highland grass
      - 10.7.2 moorland
      - 10.7.3 marshland
    - 10.8 Middle latitude deciduous forest

10.9 Coniferous forest
10.10 Tundra
10.11 Free format terrestrial environment field [Include information on problems associated with vegetation, e.g. toxic plants]

11. Elevation and topography
    11.1 Elevation
        mean
        range
    11.2 Topography
        [Free format field. The description should include the following items, when Information on them is available: roughness of terrain; slope; nature of surface (rocky, sandy, stony, etc.); surface drainage (poor, seasonally wet, well drained, etc.)]

12. Climate
    12.1 Rainfall (mm)
        12.1.1 annual precipitation
            mean
            range
        12.1.2 seasonality
            12.1.2.1 non-seasonal
            12.1.2.2 seasonal
                [input as, e.g. 05-07, meaning May to July
        12.1.3 free format rainfall data
    12.2 Temperature (degrees C)
        12.2.1 average annual temperature
            mean of several years
            range of several years
        12.2.2 av. monthly maximum temperature in year
            mean maximum of several years
            range of several years
            month(s) of maximum temperature
        12.2.3 av. monthly minimum temperature in year
            mean minimum of several years
            range of several years
            month(s) of minimum temperature
        12.2.4 free format temperature data
    12.3 Relative humidity (RH)
        12.3.1 average annual RH
            mean of several years
            range of several years
        12.3.2 maximum RH in year
            mean maximum of several years
            range of several years
            month(s) of maximum RH
        12.3.3 minimum RH in year

mean minimum of several years
range of several years
month(s) of maximum RH

12.3.4 free format RH data

13. Socio-management system
    13.1 Stationary domicile
        13.1.1 extensive management
            13.1.1.1 peasant herds
            13.1.1.2 commercial ranching
        13.1.2 village herds (smallholdings)
        13.1.3 intensive management
            13.1.3.1 grassland-based
            13.1.3.1 arable-associated
    13.2 Stationary domicile
    13.3 nomadism
        [See Glossary for definitions.]
    13.4 Free format field for socio-management system
14. Type of farm
    14.1 Peasant agriculture
    14.2 Breeding centre
    14.3 Commercial production unit
    14.4 Experiment station
    14.5 Field experiment
    14.6 Multiplication unit
    14.7 Other (specify)
    14.8 Free format field for farm type
15. Degree of management supervision
    15.1 Advisory services
    15.2 Resident professional supervision
    15.3 Supervision by scientific staff of investigation project
    15.4 None
    15.5 Unknown
16. Mating
    16.1 Mating methods in herds
        16.1.1 bucks continually with does - uncontrolled mating
        16.1.2 bucks continually with does but mating prevented except at specified times
        16.1.3 bucks separated from does except at specified times
        16.1.4 hand mating
        16.1.5 AI
            fresh semen
            frozen semen
            fresh and frozen semen
        16.1.6 AI followed by natural or hand mating
            fresh semen
            frozen semen

fresh and frozen semen

16.1.7 other (specify)

17. Herd size
    - 17.1 Number of breeding does
    - 17.2 Number of mated yearling females
    - 17.3 Number of replacement females (weaning to transfer into breeding herd)
    - 17.4 Number of stud bucks
    - 17.5 Number of reserve bucks
    - 17.6 Number of kids (birth to weaning)
    - 17.7 Number of postweaners for meat production
    - 17.8 Percentage of breeding does that are milked annually
18. Nutrition
    - 18.1 Grazing
        - 18.1.1 method
            - 18.1.1.1 zero grazed
            - 18.1.1.2 extensively in a herded group
            - 18.1.1.3 fenced
            - 18.1.1.4 strip grazed
            - 18.1.1.5 other (specify)
        - 18.1.2 pasture classification
            - 18.1.2.1 unimproved
            - 18.1.2.2 improved
        - 18.1.3 water supply of pasture
            - 18.1.3.1 rainfed
            - 18.1.3.2 irrigated
        - 18.1.4 dominant grass species
            - 18.1.4.1 species 1 [give botanical name]
                % of sward
            - 18.1.4.2 species 2
                % of sward
            - . . . . .
            - . . . . .
            - . . . . .
            - 18.1.4.n species n
                % of sward
        - 18.1.5 legume species
            - 18.1.5.1 species 1
                % of sward
            - 18.1.5.2 species 2
                % of sward
            - . . . . .
            - . . . . .
            - . . . . .
            - 18.1.5.n species n
                % of sward

18.2 Fodder crops
- 18.2.1 cut green fodder
- 18.2.2 hay
- 18.2.3 silage
- 18.2.4 other (specify)
- 18.2.5 free format field for amounts fed

18.3 Concentrates
- 18.3.1 ingredients
  - 18.3.1.1 ingredient 1 [name]
    % of concentrate diet
  - 18.3.1.2 ingredient 2
    % of concentrate diet
  - . . . . .
  - . . . . .
  - . . . . .
  - 18.3.1.n ingredient n
    % of concentrate diet
- 18.3.2 free format field for amounts of concentrates fed

  [For 18.2.5 and 18.3.2, as a minimum entry specify whether feeding is ad-lib, or not ad-lib.]

18.4 Water
- 18.4.1 sufficient to meet requirements
- 18.4.2 supply inadequate

  [Specify months in which supply is inadequate, e.g. 03 to 05.]

18.5 Minerals
- 18.5.1 supply adequate
  - 18.5.1.1 supplements not fed
  - 18.5.1.2 supplements fed
- 18.5.2 supply inadequate
  - 18.5.2.1 supplements not fed
  - 18.5.2.2 supplements fed

18.6 Seasonality of nutrition
- 18.6.1 feeding adequate all year round
- 18.6.2 feeding inadequate in some months (specify)

18.7 kid feeding
- 18.7.1 suckling plus grazing
- 18.7.2 milk replacer after early weaning

18.8 type of weaning
- 18.8.1 abrupt
  - 18.8.8.1 age at weaning
- 18.8.2 partial
  - 18.8.2.1 age at start of partial weaning
  - 18.8.2.2 age at end of partial weaning

19. Housing

19.1 Provided

19.1.1 only at night
19.1.2 at night and for part of the day
19.1.3 day and night
19.1.4 for part of day
19.1.5 type of housing (specify)

19.2 not provided

20. Diseases and parasites

[Free format field for noting any diseases prevalent at the time that performance data were recorded.]

21. Measures against diseases and parasites

[Free format field for recording prophylactic measures; in particular, dipping, anthelmintic dosing and vaccination.]

22. Performance

22.1 Body weight

[Give all weights in kg; N = number of observations; SD = standard deviation; males = entire males.]

				N	Mean	SD	Range
22.1.1	birth			-	-	-	-
		males					
			singles				
			twins				
			=> triplets				
			overall				
		females					
			singles				
			twins				
			=> triplets				
			overall				
		unspecified					
			singles				
			twins				
			=> triplets				
			overall				
22.1.2	Preweaning		Age	N	Mean	SD	Range
		males	-	-	-	-	-
			singles				
			twins				
			=> triplets				
			overall				
		females					
			singles				
			twins				
			=> triplets				
			overall				
		castrated males					

singles
twins
=> triplets
overall
unspecified
singles
twins
=> triplets
overall
[Repeat the sex groups for each age at which data are recorded.]

22.1.3 weaning

	Age	N	Mean	SD	Range
males	-	-	-	-	-

singles
twins
=> triplets
overall
females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
overall
unspecified
singles
twins
=> triplets
overall
[Repeat the sex groups for each age at which data are recorded.]

22.1.4 postweaning

males	-	-	-	-	-

singles
twins
=> triplets
overall
females
singles
twins
=> triplets
overall

castrated males
singles
twins
=> triplets
overall
unspecified
singles
twins
=> triplets
overall
[Repeat the sex groups for each age at which data are recorded.]

22.1.5	slaughter	Age	N	Mean	SD	Range	
	males	-	-	-	-	-	
	singles						
	twins						
	=> triplets						
	overall						
	females						
	singles						
	twins						
	=> triplets						
	overall						
	castrated males						
	singles						
	twins						
	=> triplets						
	overall						
	unspecified						
	singles						
	twins						
	=> triplets						
	overall						

[Repeat the sex groups for each age at which data are recorded. Specify if fasted (F), not fasted (NF) or fasting status unknown (U).]

22.1.6	first mating	-	-	-	-	-
	males					
	females					
22.1.7	first kidding	-	-	-	-	-
22.1.8	maturity and postmaturity					
	does					
	bucks					
	castrates					

22.2	Average daily gain (g)	N	Mean	SD	Range

22.2.1 preweaning

22.2.1.1 unspecified age range

males	-	-	-	-
singles				
twins				
=>triplets				
overall				
females				
singles				
twins				
=>triplets				
overall				
castrated males				
singles				
twins				
=>triplets				
overall				
unspecified				
singles				
twins				
=>triplets				
overall				

22.2.1.2 age range 1 (specify)

	N	Mean	SD	Range
males				
singles				
twins				
=>triplets				
overall				
females				
singles				
twins				
=>triplets				
overall				
castrated males				
singles				
twins				
=>triplets				
overall				
unspecified				
singles				
twins				
=>triplets				
overall				
. . . . .				
. . . . .				

		. . . . .				
	22.2.1.n age range n					
		males	-	-	-	-
		singles				
		twins				
		=>triplets				
		overall				
		females				
		singles				
		twins				
		=>triplets				
		overall				
		castrated males				
		singles				
		twins				
		=>triplets				
		overall				
		unspecified				
		singles				
		twins				
		=>triplets				
		overall				
22.2.2	postweaning		N	Mean	SD	Range
	22.2.2.1 unspecified age range					
		males	-	-	-	-
		singles				
		twins				
		=>triplets				
		overall				
		females				
		singles				
		twins				
		=>triplets				
		overall				
		castrated males				
		singles				
		twins				
		=>triplets				
		overall				
		unspecified				
		singles				
		twins				
		=>triplets				
		overall				
	22.2.2.2 age (or weight) range 1 (specify)					

males
singles
twins
=>triplets
overall
females
singles
twins
=>triplets
overall
castrated males
singles
twins
=>triplets
overall
unspecified
singles
twins
=>triplets
overall
. . . . .
. . . . .
. . . . .

22.2.2.n age (weight) range n
[as for age range 1]

22.2.3 feed conversion for growth
[free format field]

22.3 Body measurements	Age	N	Mean	SD	Range
22.3.1 chest girth					
males	-	-	-	-	-
singles					
twins					
=> triplets					
overall					
females					
singles					
twins					
=> triplets					
overall					
castrated males					
singles					
twins					
=> triplets					
overall					
unspecified					

singles
twins
=> triplets
overall

[Up to 4 ages can be recorded for all body measurements, repeating the sex classes required.]

22.3.2 body length

males - - - - -
singles
twins
=> triplets
overall

females
singles
twins
=> triplets
overall

castrated males
singles
twins
=> triplets
overall

unspecified
singles
twins
=> triplets
overall

22.3.3 height at withers

males - - - - -
singles
twins
=> triplets
overall

females
singles
twins
=> triplets
overall

castrated males
singles
twins
=> triplets
overall

unspecified
singles

twins
=> triplets
overall

22.3.4 free format field for data on other body measurements

[Enter data in the same way as for the measurements specified above.]

22.4 Carcass characters

[Each character can be recorded at up to 4 ages, as with body measurements.]

	Age	N	Mean	SD	Range
22.4.1 weight					
22.4.1.1 hot					
males	-	-	-	-	-
singles					
twins					
=>triplets					
overall					
females					
singles					
twins					
=>triplets					
overall					
castrated males					
singles					
twins					
=>triplets					
overall					
unspecified					
singles					
twins					
=>triplets					
overall					
22.4.1.2 cold					
males					
singles					
twins					
=>triplets					
overall					
females					
singles					
twins					
=>triplets					
overall					
castrated males					
singles					
twins					

=>triplets
overall
unspecified
singles
twins
=>triplets
overall

22.4.2 length - - - - -

males
singles
twins
=> triplets
overall
females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
overall
unspecified
singles
twins
=> triplets
overall

Age N Mean SD Range

22.4.3 dressing percentage

22.4.3.1 hot

males - - - - -
singles
twins
=>triplets
overall
females
singles
twins
=>triplets
overall
castrated males
singles
twins
=>triplets

					overall				
				unspecified					
					singles				
					twins				
					=>triplets				
					overall				
	22.4.3.2	cold							
				males					
					singles				
					twins				
					=>triplets				
					overall				
				females					
					singles				
					twins				
					=>triplets				
					overall				
				castrated males					
					singles				
					twins				
					=>triplets				
					overall				
				unspecified					
					singles				
					twins				
					=>triplets				
					overall				
22.4.4	skin percentage					-	-	-	-	-
		males								
		females								
		castrated males								
		unspecified								
22.4.5	meat:bone ratio					-	-	-	-	-
		males								
				singles						
				twins						
				=> triplets						
				overall						
		females								
				singles						
				twins						
				=> triplets						
				overall						
		castrated males								
				singles						

twins
=> triplets
overall
unspecified
singles
twins
=> triplets
overall

22.4.6 loin-eye area
[Specify vertebra number.]
males - - - - -
singles
twins
=> triplets
overall
females
singles
twins
=> triplets
overall
castrated males
singles
twins
=> triplets
overall
unspecified
singles
twins
=> triplets
overall

22.4.7 fat thickness (mm) - - - - -
[subcutaneous, specify site]
males
singles
twins
=> triplets
overall
females
singles
twins
=> triplets
overall
castrated males
singles
twins

		=> triplets					
		overall					
	unspecified						
		singles					
		twins					
		=> triplets					
		overall					
22.4.8	lean percentage		-	-	-	-	-
	males						
		singles					
		twins					
		=> triplets					
		overall					
	females						
		singles					
		twins					
		=> triplets					
		overall					
	castrated males						
		singles					
		twins					
		=> triplets					
		overall					
	unspecified						
		singles					
		twins					
		=> triplets					
		overall					
22.4.9	fat percentage		-	-	-	-	-
	males						
		singles					
		twins					
		=> triplets					
		overall					
	females						
		singles					
		twins					
		=> triplets					
		overall					
	castrated males						
		singles					
		twins					
		=> triplets					
		overall					
	unspecified						

singles
twins
=> triplets
overall

			Age	N	Mean	SD	Range
22.4.10	bone percentage						
	males		-	-	-	-	-
		singles					
		twins					
		=> triplets					
		overall					
	females						
		singles					
		twins					
		=> triplets					
		overall					
	castrated males						
		singles					
		twins					
		=> triplets					
		overall					
	unspecified						
		singles					
		twins					
		=> triplets					
		overall					
22.4.11	free format field for other carcass characters						
22.5	Reproduction						
22.5.1	sexual maturity of males (days)			N	Mean	SD	Range
	22.5.1.1	age at 1st ejaculation		-	-	-	-
	22.5.1.2	age at 1st mating					
22.5.2	sexual maturity of females (days)						
	22.5.2.1	age at 1st oestrus					
	22.5.2.2	age at 1st ovulation					
	22.5.2.3	age at 1st mating					
	22.5.2.4	age at 1st kidding					
22.5.3	oestrous cycle						
	22.5.3.1	cycle duration (days)		-	-	-	-
	22.5.3.2	oestrus duration (hours)					
	22.5.3.3	seasonality					
		number of oestrous					
		months per year		-	-	-	-
		period(s) e.g. months 09 to 11.					
	22.5.3.4	detection method					
		teaser					

		entire male				
		other (specify)				
	22.5.3.5	number of does normally mated in herd (give mean and range only)				
22.5.4	kidding					
	22.5.4.1	number of does exposed to bucks	-	-	-	-
		1st parity				
		2nd parity				
		= > 3rd parity				
		all parities				
	22.5.4.2	% of does exposed which gave gave birth to the specified numbers of kids (alive + stillborn)	-	-	-	-
		1st parity				
		0				
		1				
		2				
		= >3				
		2nd parity				
		0				
		1				
		2				
		= >3				
		3rd parity				
		0				
		1				
		2				
		= >3				
		all parities	-	-	-	-
		0				
		1				
		2				
		= >3				
	22.5.4.3	number of kids born (live + stillborn) per doe exposed				
		1st parity	-	-	-	-
		2nd parity				
		= > 3rd parity				
		all parities				
	22.5.4.4	litter size (live + stillborn)				
		1st parity	-	-	-	-
		2nd parity				
		= > 3rd parity				
		all parities				
	22.5.4.5	% of lambing ewes with the specified numbers of live lambs at				

weaning

1st parity - - - -

0

1

2

= >3

2nd parity

0

1

2

= >3

3rd parity

0

1

2

= >3

all parities - - - -

0

1

2

= >3

22.5.4.6 number of lambs weaned per ewe exposed

1st parity - - - -

2nd parity

= > 3rd parity

all parities

22.5.4.7 kidding interval (days) - -

22.5.4.8 lifetime number of matings

22.5.5 semen

22.5.5.1 inherited sperm abnormalities

[free format field for description and data]

22.5.5.2 other characters

[free format field]

22.5.6 reproductive disorders [free format field]

22.5.6.1 non-infectious

[Give name and frequency of each.]

22.5.6.2 infectious

[Give name and frequency of each.]

22.6 Mortality		N	%
22.6.1	annual adult mortality	-	-
	males		
	females		
22.6.2	prenatal mortality		
	22.6.2.1 abortions	-	-
	22.6.2.2 stillbirths		

singles
twins
=>triplets
overall

22.6.3 preweaning mortality
(birth to weaning) - -
singles
twins
=>triplets
overall

22.7 Dairy performance

22.7.1 milking system

22.7.1.1 hand milking with kid present

22.7.1.2 hand milking without kid present

22.7.1.3 machine milking with kid present

22.7.1.4 machine milking without kid present

22.7.1.5 mixed (combination of the above; specify which)

22.7.1.6 other system (specify)

22.7.1.7 daily milking frequency
[Where relevant, state how long the kid is with the doe during a 24-hour period.]

22.7.1.8 estimation method for sucked milk yield

22.7.2 milk let-down

22.7.2.1 % of 1st lactation does failing to let down milk in absence of the kid

22.7.2.2 of lactations of 21 days or less

	N	Mean	SD	Range
22.7.3 total lactation milk yield	-	-	-	-
22.7.3.1 first lactation				
milked				
sucked				
22.7.3.2 second lactation				
milked				
sucked				
22.7.3.3 third lactation				
milked				
sucked				
22.7.3.4 fourth or later lactation				
milked				
sucked				
22.7.3.5 all lactation				
milked				
sucked				
22.7.4 daily milk yield	-	-	-	-
22.7.4.1 first lactation				
milked				

		sucked					
	22.7.4.2	second lactation					
		milked					
		sucked					
	22.7.4.3	third lactation					
		milked					
		sucked					
	22.7.4.4	fourth or later lactation					
		milked					
		sucked					
	22.7.4.5	all lactation					
		milked					
		sucked					
22.7.5	milk fat yield				-	-	-	-
	22.7.5.1	first lactation						
	22.7.5.2	second lactation						
	22.7.5.3	third lactation						
	22.7.5.4	fourth or later lactation						
	22.7.5.5	all lactation						
					N	Mean	SD	Range
22.7.6	milk protein yield				-	-	-	-
	22.7.6.1	first lactation						
	22.7.6.2	second lactation						
	22.7.6.3	third lactation						
	22.7.6.4	fourth or later lactation						
	22.7.6.5	all lactation						
22.7.7	milk fat percentage [M = month in which recorded; F = frequency of recording]							
			M	F	N	Mean	SD	Range
	22.7..7.1	first lactation	-	-	-	-	-	-
	22.7.7.2	second lactation						
	22.7.7.3	third lactation						
	22.7.7.4	fourth or later lactation						
	22.7.7.5	all lactation						
22.7.8	milk protein percentage		-	-	-	-	-	-
	22.7.8.1	first lactation						
	22.7.8.2	second lactation						
	22.7.8.3	third lactation						
	22.7.8.4	fourth or later lactation						
	22.7.8.5	all lactation						
22.7.9	SNF percentage		-	-	-	-	-	-
	22.7.9.1	first lactation						
	22.7.9.2	second lactation						
	22.7.9.3	third lactation						
	22.7.9.4	fourth or later lactation						

22.7.9.5 all lactation

22.7.10	milking rate (kg/min)	-	-	-	-	-	-
	22.7.10.1 first lactation						
	22.7.10.2 second lactation						
	22.7.10.3 third lactation						
	22.7.10.4 fourth or later lactation						
	22.7.10.5 all lactation						
22.7.11	lactation duration (days)	-	-	-	-	-	-
	22.7.11.1 first lactation						
	22.7.11.2 second lactation						
	22.7.11.3 third lactation						
	22.7.11.4 fourth or later lactation						
	22.7.11.5 all lactation						

22.7.12 persistency of lactation

free format field [specify which measure of persistency is being used.]

		N	Mean	SD	Range
22.7.13	productive lifespan (months)	-	-	-	-
22.7.14	feed conversion for millk				

[free format field]

22.8 Mohair production

22.8.1 sampling

22.8.1.1 site

shoulder
mid-side
thigh

22.8.2 number of shearings per year

		Age	N	GP	Mean	SD	Range
22.8.3	Coat composition of adults*						
	22.8.3.1 % of true mohair fibre	-	-	-	-	-	-
	22.8.3.2 % of heterotypes						
	22.8.3.3 % of kemps	[*see Glossary]					
	22.8.3.4 % of hair						

[GP = duration of wool growth period in months]

22.8.3.5 method of estimation

weight
count

22.8.4 greasy fleece weight

1st shearing

male singles	-	-	-	-	-	-
male multiples						
female singles						
female multiples						

later shearings
males (all)
females (all)

22.8.5 clean fleece weight	Age	N	GP	Mean	SD	Range
1st shearing						
male singles	-	-	-	-	-	-
male multiples						
female singles						
female multiples						
later shearings						
males (all)						
females (all)						

22.8.6 Clean fleece percentage
1st shearing
male singles
male multiples
female singles
female multiples
later shearings
males (all)
females (all)

22.8.7 Staple length	Age	N	GP	Mean	SD	Range
1st shearing						
male singles	-	-	-	-	-	-
male multiples						
female singles						
female multiples						
later shearings						
males (all)						
females (all)						

22.8.8 fibre diameter	Age	N	Mean	SD	Range
22.8.8.1 true mohair fibre					
1st shearing	-	-	-	-	-
male singles					
male multiples					
female singles					
female multiples					
later shearings					
males (all)					
females (all)					
22.8.8.2 heterotypes					
1st shearing					
male singles					

male multiples
female singles
female multiples
later shearings
males (all)
females (all)

22.8.8.3 Kemps

	Age	N	Mean	SD	Range
1st shearing					
male singles	-	-	-	-	-
male multiples					
female singles					
female multiples					
later shearings					
males (all)					
females (all)					

22.8.9 fleece colour
white
wholly pigmented
partly pigmented
22.8.10 fleece conversion for wool
[free format field]

22.9 Cashmere/pashmina production

22.9.1 weight of fibre per combing/collection (g)

Age	N	GP	Mean	SD	Range
-	-	-	-	-	-

22.9.2 clean yield %
22.9.3 fibre length
22.9.4 fibre diameter

22.10 Hair production

22.10.1 weight per clipping (kg)	-	-	-	-	-	-

22.10.2 clean yield %
22.10.3 hair length
22.10.4 hair diameter

22.11 skin production

	N	Mean	SD	Range
22.1.1 skin weight				
kids				
adults				
22.1.2 skin length				
kids				
adults				
22.1.3 skin width				
kids				
adults				

23. Physiology

23.1 Reaction to solar radiation

23.1.1 relative increase due to exposure (%)

23.1.1.1 rectal temperature (males)

age (months)

duration of exposure (hours)

mean

SD

range

23.1.1.2 rectal temperature (females)

age

duration of exposure

mean

SD

range

23.1.1.3 pulse rate (males)

age

duration of exposure

mean

SD

range

23.1.1.4 pulse rate (females)

age

duration of exposure

mean

SD

range

23.1.1.5 respiration rate (males)

age

duration of exposure

mean

SD

range

23.1.1.6 respiration rate (females)

age

duration of exposure

mean

SD

range

23.1.1.7 environmental factors during the test

	Mean	SD	Range
air temperature (degrees C)			
before stress			
during stress			
relative humidity (%)			
before stress			

during stress
wind velocity (m/s)
before stress
during stress

23.2 Reaction to climate chamber stress

23.2.1 relative increase due to exposure (%)

23.2.1.1 rectal temperature (males)
age
duration of exposure
mean
SD
range

23.2.1.2 rectal temperature (females)
age
duration of exposure
mean
SD
range

23.2.1.3 pulse rate (males)
age
duration of exposure
mean
SD
range

23.2.1.4 pulse rate (females)
age
duration of exposure
mean
SD
range

23.2.1.5 respiration rate (males)
age
duration of exposure
mean
SD
range

23.2.1.6 respiration rate (females)
age
duration of exposure
mean
SD
range

23.2.1.7 environmental factors during the test

	Mean	SD	Range
air temperature (degrees C)	Mean	SD	Range

before stress
during stress
relative humidity (%)
before stress
during stress

24. Genetic parameters

			Estimate	SE	Range
24.1	Heritabillty				
	24.1.1	trait 1	-	-	-
	. . . .	[SE = standard error]			
	. . . .				
	. . . .				
	24.1.n	trait n			
24.2	Repeatbility				
	24.1.2	trait 1			
	. . . .				
	. . . .				
	. . . .				
	24.1.n	trait n			
24.3	Geneteic correction				
	(1)	between .... and ...	-	-	-
	. . . .				
	. . . .				
	. . . .				
	(n)	between .... and ...	-	-	-

24.4 Other quantitative genetic parameters
[free format field]

24.5 Inbreeding coefficient

25. Cytogenetics

25.1 Chromosome abnormalities

25.1.1 translocations
[free format field; designation of translocation; frequency in population]

26. Inherited abnormalities
[free format field for abnormalities; give name, gene symbol (if relevant), and gene frequency when known]

27. Resistance to infectious diseases and parasites

27.1 Strain or breed comparisons

27.1.1 helminths, arthropods and protozoa
[free format field; specify comparative incidence and/or mortality, including faecal egg counts, tick resistance indices, etc.]

27.1.2 diseases due to agents other than in 27.1.1
[free format field; specify comparative incidence and/or mortality.]

DATA BANK FOR ANIMAL GENETIC RES OURCES: DESCRIPTOR LISTS PIG DESCRIPTORS

MASTER RECORD

Breed name

[Use name in Mason's World Dictionary of Livestock Breeds. Types and Varieties. if the breed is given in the dictionary.]

2. Breed name synonyms
3. Strains (or within-breed types)
4. General information and breed description

4.1 Country and population data

4.1.1 [country name 1] [Give date of census or estimate]

4.1.1.1 population size
4.1.1.2 census data
4.1.1.3 estimated value
4.1.1.4 unspecified

[Categories 4.1.1.2 to 4.1.1.4 are for indicating by "Y" the type of population data.]

4.1.1.5 annual population trend +%;-%; unknown
4.1.1.6 herd sizes

government farm
mean
range
distribution %
1-10 animals
11-50
51-100
101-200
>200

commercial farm
mean
range
distribution %
1-10 animals
11-50
51-100
101-200
>200

village farm
mean
range
distribution %
1-10 animals
11-50
51-100
101-200

>200
communally owned herds
mean
range
distribution %
1-10 animals
11-50
51-100
101-200
>200

4.1.1.7 origin of breed
indigenous
exotic

4.1.2 [country name 2]

4.l.n [country name n]

4.2 Colour

[Fill in fixed format fields, or write description in the free format description field, or do both.]

4.2.1 colour1[name] %of surface area [range of values permissible]
males
females
sexes not separated

4.2.2 colour2 % of surface area
males
females
sexes not separated

4.2.3 colour3 % of surface area
males
females
sexes not separated

4.2.4 distinctive colour markings
[free format description]

4.3 Head

4.3.1 profile
convex
concave
straight

4.4 Ears

4.4.1 erect (prick ears)

4.4.2 pendulous
semi-lop (e.g. Pietrain)
lop

4.5 Body

4.5.1 backline

straight
swaybacked (i.e markedly convex ventrally)

4.5.2 belly

pot (e.g. Vietnamese)
not pot-bellied

4.5.3 skin

smooth
wrinkled

4.5.4 tail

straight
curly or kinked

4. 6 Basic temperament

males
docile
moderately tractable
wild
females
docile
moderately tractable
wild

4.7 Conservation status

4.7.1 endangered
4.7.2 vulnerable
4.7.3 rare
4.7 .4 indeterminate
4.7.5 out of danger
4.7.6 insufficiently known
4.7.7 not at risk (none.of the above)

The first six of these categories are used by the International Union for the Conservation of Nature and Natural Resources. Their definitions, slightly amended,are as follows.

Endangered.; Breeds in danger of extinction, and whose survival is unlikely if the causal factors continue operating.

Vulnerable: Breeds likely to move into the Endangered category in the near future if the causal factors continue operating.

Rare.: Breeds with small populations that are not at present Endangered or Vulnerable, but are at risk.

Indeterminate; Breeds known to be Endangered. Rare or Vulnerable, but where there is not enough information to say which of the three categories is appropriate.

Out of Danger: Breeds formerly included in one of the above categories, but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has been removed.

Insufficiently Known: Breeds that are suspected but not definitely known to belong to any of the above categories, because of lack of information.

4.8 Free format breed description field

[A description of breed characters may be entered here instead of the fixed fields of

sections 4.3 to 4.6, or material may be added to supplement the fixed fields.

4.9 Porcine stress syndrome (halothane susceptibility)

4.9.1 percentage of positive reactors in breed

4.9.2 frequency of halothane gene (n_) in breed

5. Master record prepared by:

5.1 Name:

5.2 Title: [Dr, Mr, Miss, etc.]

5.3 Address:

5.4 Affiliation: [Organisation. Company, Consultant, etc]

5.5 Date of preparation:

6. Master record updating or editing

6.1 First amendment by:

6.1.1 Name:

6.1.2 Title:

6.1.3 Address:

6.1.4 Affiliation:

6.1.5 Date of amendment:

6.n Nth amendment by:

6.n.1 Name:

6.n.2 Title:

6.n.3 Address:

6. n. 4 Affiliation:

6.n.5 Date of amendment

SLAVE RECORD

1. Breed name of MASTER record
2. Breed/crossbred type of SLAVE record
   [Give exact composition if possible, e.g. 75% Large White 2 5% Landrace.]
3. Strain (or distinct within-breed type)
4. Period of data
   year month day [e.g. 1982:05:14]
   From
   To
5. Data form prepared by:
   5.1 Name:
   5.2 Title: [Dr. Mr, Miss, etc.]
   5.3 Address:
   5.4 Affiliation: [Organisation, Company, Consultant, etc.]
   5.5 Date of preparation:
6. Bibliographical reference of source document
   [pointer to the reference stored in the bibliographical file]
7. Data type and analysis
   7.1 Data
      7.1.1 unadjusted data
      7.1.2 data adjusted for environmental or other factors*
      7.1.3 survey data
      *[adjusted by the author of the original paper or document]
   7.2 Treatment of data
      7.2.1 descriptive
      7.2.2 analytical
      7.2.3 none
8. Reliability code
   [Grade data subjectively on a scale of 1 to 5; l=highly reliable, 5=low reliability.]
9. Country [in which data were recorded or experiment carried out, etc.]
   9.1 country subdivision(s) [province, county, district, etc]
10. Terrestrial environment
   10.1 Tropical rainforest
   10.2 Tropical deciduous forest
   10.3 Tropical scrub forest
   10.4 Tropical savannah
   10.5 Desert
   10.6 Mediterranean woodland and scrub
   10.7 Middle latitude grassland
      10.7.1 highland grass
      10.7.2 moorland
      10.7.3 marshland
   10.8 Middle latitude deciduous forest
   10.9 Coniferous forest
   10.10 Tundra

10.11 Free format terrestrial environment field

[Include information on problems associated with vegetation, e.g. toxic plants]

11. Elevation and topography

11.1 Elevation

mean

range

11.2 Topography

[Free format field. The description should include the following items, when information on them is available: roughness of terrain; slope; nature of surface (rocky, sandy, stony, etc.); surface drainage (poor, seasonally wet, well drained, etc.)]

12. Climate

12.1 Rainfall (mm)

12.1.1 annual precipitation

mean

range

12.1.2 seasonality

12.1.2.1 non-seasonal

12.1.2.2 seasonal

[input as, e.g. 05-07. meaning May to July

12.1.3 free format rainfall data

12.2 Temperature (degrees C)

12.2.1 average annual temperature

mean of several years

range of several years

12.2.2 maximum temperature in year

mean maximum of several years

range of several years

month(s) of maximum temperature

12.2.3 minimum temperature in year

mean minimum of several years

range of several years

month(s) of minimum temperature

12.2.4 free format temperature data

12.3 Relative humidity (RH)

12.3.1 average annual RH

mean of several years

range of several years

12.3.2 maximum RH in year

mean maximum of several years

range of several years

month(s) of maximum RH

12.3.3 minimum RH in year

mean minimum of several years

range of several years

month(s) of maximum RH

12.3.4 free format RH data

13. Soclo-management system
    - 13.1 minimal input agriculture
        - 13.1.1 scavenging
        - 13.2.2 scavenging plus supplementary feed
    - 13.2 semi - intensive
    - 13.3 intensive
    - 13.4 Free format field for socio-management system
14. Type of farm
    - 14.1 Peasant agriculture
    - 14.2 Breeding centre
    - 14.3 Commercial production unit
    - 14.4 Experiment station
    - 14.5 Field experiment
    - 14.6 Multiplication unit
    - 14.7 Other (specify)
    - 14.8 Free format field for farm type
15. Degree of management supervision
    - 15.1 Advisory services
    - 15.2 Resident professional supervision
    - 15.3 Supervision by scientific staff of investigation project
    - 15.4 None
16. Mating method
    - 16.1 natural
        - uncontrolled
        - hand mating
    - 16.2 Al
        - fresh semen
        - frozen semen
        - fresh and frozen semen
    - 16.3 AI plus uncontrolled natural mating
        - fresh semen
        - frozen semen
        - fresh and frozen semen
    - 16.4 AI plus hand mating
        - fresh semen
        - frozen semen
        - fresh and frozen semen
    - 16.5 number of matings/inseminations per oestrus
        - natural mating
        - AI
        - AI and natural mating
    - 16.6 Mating ratio
        - number of females per male

16.7 Mating period
number of days males are put with females in natural mating

17. Herd size
17.1 Number of breeding sows
mean
range
17.2 Number of bred gilts
mean
range
17.3 Number of replacement females (weaning to transfer into breeding herd)
mean
range
17.4 Number of stud boars
mean
range
17.5 Number of reserve boars
mean
range
17.6 Number of piglets (birth to weaning)
mean
range
17.7 Number of growing/finishing pigs
mean
range

18. Nutrition
18.1 Grazing
18.1.1 sows and litters
18.1.2 pregnant sows/gilts
18.1.3 growing/finishing pigs
18.1.4 other breeding stock
18.2 Fodder
18.2.1 ingredients
18.2.1.1 ingredient 1 [name]
% of total fodder
18.2.1.2 ingredient 2
% of total fodder
18.2.1.n ingredient n
% of total fodder
18.2.2 free format field for amounts of fodder fed
18.3 Swill
18.3.1 boiled
18.3.2 unboiled
18.3.3 free format field for amounts of swill fed
18.4 Concentrates
18.4.1 ingredients

18.4.1.1 ingredient 1 [name]

% of concentrate diet

18.4.1.2 ingredient 2

% of concentrate diet

18.4.1.n ingredient n

% of concentrate diet

18.4.2 free format field for amounts of concentrates fed

[For 18.2.2, 18.3.3 and 18.4.2 , as a minimum entry specify whether feeding is ad-lib. or not ad-lib.]

18.5 Water

18.4.1 sufficient to meet requirements

18.4.2 supply inadequate

[Specify months in which supply is inadequate, e.g. 03 to 05.]

18.6 Minerals

18.5.1 supply adequate

18.5.1.1 supplements not fed

18.5.1.2 supplements fed

18.5.2 supply inadequate

18.5.2.1 supplements not fed

18.5.2.2 supplements fed

18.6 Seasonality of nutrition

18.6.1 feeding adequate all year round 18.6 2 feeding inadequate in some months (specify)

19. Housing

19.1 Provision

19.1.1 none

19.1.2 only during the day

19.1.3 only at night

19.1.4 day and night

19.1.5 for part of day

19.2 Class of stock

19.2.1 preweaners

19.2.1.1 outdoors with sow

shelter provided (e.g. arks) no shelter

19.2.1.2 houses of local, natural materials

19.2.1.3 houses of brick, concrete, etc.

19.2.1.4 other (specify)

19.2.2 growing/finishing pigs

19.2.2.1 outdoors

19.2.2.2 houses of local, natural materials

19.2.2.3 houses of brick, concrete, etc.

individual pens

group pens

19.2.2.4 cages

individual

group

19.2.2.5 other (specify)

19.2.3 breeding stock

19.2.3.1 outdoors

males

females

19.2.3.2 houses of local, natural materials

males

females

19.2.3.3 houses of brick, concrete, etc.

individual pens

males

females

group pens

females

19.2.3.5 other (specify)

20. Diseases and parasites

[Free format field for noting any diseases prevalent at the time that performance data were recorded.]

21. Measures against diseases and parasites

[Free format field for recording prophylactic measures: in particular, dipping, anthelmintic dosing and vaccination.]

22. Performance

22.1 Body weight

[Give all weights in kg; N = number of observations; SD = standard deviation; males = entire males.]

				N	Mean	SD	Range
22.1.1	birth			-	-	-	-
		males					
		females					
		unspecified					
22.1.2	preweaning		Age	N	Mean	SD	Range
		males	-	-	-	-	-
		females					
		castrated males					
		unspecified					

[Repeat the sex groups for each age at which data are recorded.]

				N	Mean	SD	Range
22.1.3	weaning		Age	N	Mean	SD	Range
		males	-	-	-	-	-
		females					
		castrated males					
		unspecified					

[Repeat the sex groups for each age at which data are recorded.]

22.1.4 postweaning

males - - - - -
females
castrated males
unspecified
[Repeat the sex groups for each age at which data are recorded.]

22.1.5 first mating - - - - -
males
females

22.1.6 fist farrowing - - - - -

22.1.7 maturity and postmaturity
breeding females
stud boars

22.1.8 slaughter (fasted) - - - - -
males
females
castrated males
unspecified
[Repeat the sex groups for each age at which data are recorded.]

22.1.9 slaughter (nonfasted) - - - - -
males
females
castrated males
unspecified
[Repeat the sex groups for each age at which data are recorded.]

22.1.10 free format field, for ages not specified in 22.1.1 to 22.1.9.

22.2 Average daily gain (g) N Mean SD Range

22.2.1 preweaning

22.2.1.1 unspecified age range
males - - - -
females
castrated males
unspecified

22.2.1.2 age range 1 (specify)
males
females
castrated males
unspecified
. . . . .
. . . . .
. . . . .

22.2.1.n age range n
males
females

castrated males
unspecified

22.2.2 postweaning N Mean SD Range

22.2.2.1 unspecified age range

males - - - -
females
castrated males
unspecified

22.2.2.2 weaning to slaughter
(weight unspecified) - - - -
males
females
castrated males
unspecified

22.2.2.3 weaning to =< 90 kg - - - -
males
females
castrated males
unspecified

22.2.2.4 weaning to 91-100 kg - - - -
males
females
castrated males
unspecified

22.2.2.5 weaning to 101-110 kg - - - -
males
females
castrated males
unspecified

22.2.2.6 weaning to => 111 kg - - - -
males
females
castrated males
unspecified

22.2.3 feed conversion for growth
[free format field]

22.3 Body measurements Age N Mean SD Range

22.3.1 chest girth

males - - - - -
females
castrated males
unspecified

[Up to IX ages can be recorded for all body measurements, repeating the sex classes required.]

22.3.2 body length

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
castrated males					
unspecified					

22.3.3 height at withers

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
castrated males					
unspecified					

22.3.4 free format field for data on other body measurements

[Enter data in the same way as for the measurements specified above.]

22.4 Carcass characters

[Each character can be recorded at up to *k* ages, as with body measurements.]

22.4.1 weight

22.4.1.1 hot

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
castrated males					
unspecified					

22.4.1.2 cold

males					
females					
castrated males					
unspecified					

22.4.2 length

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
castrated males					
unspecified					

22.4.3 dressing percentage

22.4.3.1 hot

	Age	N	Mean	SD	Range
males	-	-	-	-	-
females					
castrated males					
unspecified					

22.4.3.2 cold

males					
females					
castrated males					
unspecified					

22.4.4 skin percentage

	Age	N	Mean	SD	Range
males	-	-	-	-	-

females
castrated males
unspecified

22.4.5 meat:bone ratio - - - - -
males
females
castrated males
unspecified

22.4.6 ham weight as a percentage
of carcass weight
males - - - - -
females
castrated males
unspecified

22.4.7 loin-eye area
[Specify vertebra number.]
males - - - - -
females
castrated males
unspecified

22.4.8 backfat thickness (mm) - - - - -
[subcutaneous, specify site]
males
females
castrated males
unspecified

22.4.9 lean percentage - - - - -
males
females
castrated males
unspecified

22.4.10 fat percentage - - - - -
males
females
castrated males
unspecified

Age N Mean SD Range

22.4.11 bone percentage
males - - - - -
females
castrated males
unspecified

22.4.12 free format field for other carcass characters

22.5 Reproduction

22.5.1 sexual maturity of males (days) N Mean SD Range

	22.5.1.1	age at 1st ejaculation	-	-	-	-
	22.5.1.2	age at 1st mating				
22.5.2	sexual maturity of females (days)					
	22.5.2.1	age at 1st oestrus				
	22.5.2.2	age at 1st ovulation				
	22.5.2.3	age at 1st mating				
	22.5.2.4	body weight at first oestrus				
22.5.3	oestrous cycle					
	22.5.3.1	cycle duration (days)	-	-	-	-
	22.5.3.2	oestrus duration (hours)				
	22.5.3.3	interval from farrowing to 1st oestrus	-	-	-	-
	22.5.3.4	interval from weaning to 1st oestrus				
	22.5.3.5	detection method				
		herdsman				
		teaser				
		entire male				
		electrical resistance of vaginal mucus/mucosa				
		other (specify)				
22.5.4	fertility					
	22.5.4.1	conception rate (*%)*				
	22.5.4.2	number of services per conception	-	-	-	-
	22.5.4.3	number of services per farrowing				
	22.5.4.4	interval from farrowing to conception (days)				
	22.5.4.5	farrowing interval (days)				
	22.5.4.6	farrowing percentage				
22.5.5	fecundity					
	22.5.5.1	litter size	N	Mean	SD	Range
		birth (total)				
		1st parity	-	-	-	-
		- - - -				
		- - - -				
		- - - -				
		nth parity	-	-	-	-
		unspecified				
		birth (liveborn)				
		1st parity				
		- - - -				
		- - - -				
		- - - -				
		nth parity	-	-	-	-
		unspecified				
		weaning				
		1st parity				
		- - - -				

- - - -
- - - -
nth parity
unspecified

22.5.6 semen

22.5.6.1 inherited sperm abnormalities
[free format field for description and data]

22.5.6.2 other characters
[free format field]

22.5.7 prenatal mortality - - - -

22.5.7.1 embryo (%)

22.5.7.2 abortion (%)

22.5.7.3 stillbirths (%)

22.5.8 reproductive disorders [free format field]

22.5.8.1 non-infectious
[Give name and frequency of each.]

22.5.8.2 infectious
[Give name and frequency of each.]

22.6 Postnatal mortality

22.6.1 preweaning (%)

22.6.2 postweaning (%) - specify period

23. Physiology

23.1 Reaction to solar radiation

23.1.1 relative increase due to exposure (%)

23.1.1.1 rectal temperature (males)
age
(months)
duration of exposure (hours)
mean
SD
range

23.1.1.2 rectal temperature (females)
age
duration of exposure
mean
SD
range

23.1.1.3 pulse rate (males)
age
duration of exposure
mean
SD
range

23.1.1.4 pulse rate (females)
age

duration of exposure
mean
SD
range

23.1.1.5 respiration rate (males)
age
duration of exposure
mean
SD
range

23.1.1.6 respiration rate (females)
age
duration of exposure
mean
SD
range

23.1.1.7 environmental factors during the test

	Mean	SD	Range
air temperature (degrees C)			
before stress			
during stress			
relative humidity (%)			
before stress			
during stress			
wind velocity (m/s)			
before stress			
during stress			

23.2 Reaction to climate chamber stress

23.2.1 relative increase due to exposure (%)

23.2.1.1 rectal temperature (males)
age
duration of exposure
mean
SD
range

23.2.1.2 rectal temperature (females)
age
duration of exposure
mean
SD
range

23.2.1.3 pulse rate (males)
age
duration of exposure
mean

SD
range

23.2.l.4 pulse rate (females)
age
duration of exposure
mean
SD
range

23.2.1.5 respiration rate (males)
age
duration of exposure
mean
SD
range

23.2.1.6 respiration rate (females)
age
duration of exposure
mean
SD
range

23.2.1.7 environmental factors during test

		Mean	SD	Range
air temperature		-	-	-
	before stress			
	during stress			
relative humidity				
	before stress			
	during stress			

24. Genetic parameters

			Value	SE	Range
24.1	Heritability				
24.1.1	trait 1		-	-	-
. . . .		[SE = standard error]			
. . . .					
. . . .					
24.1.n	trait n				
24.2	Repeatability				
24.2.1	trait 1				
. . . .					
. . . .					
. . . .					
24.2.n	trait n				
24.3	Genetic correlation				
(1) between .... and			-	-	-
. . . .					
. . . .					

. . . .

(n) between .... and .... - - -

24.4 Other quantitative genetic parameters

[free format field]

24.5 Inbreeding coefficient

25. Cytogenetics

25.1 Chromosome abnormalities

25.1.1 translocations

[free format field; designation of translocation; frequency in population]

26. Inherited abnormalities

26.1 Porcine stress syndrome (halothane susceptibility)

26.1.1 percentage of positive reactors

26.1.2 frequency of halothane gene (n.)

26.2 [free format field for other abnormalities; give name, gene symbol (if relevant), and gene frequency when known]

27. Resistance to infectious diseases and parasites

27.1 Strain or breed comparisons

27.1.1 helminths, arthropods and protozoa

[free format field; specify comparative incidence and/or mortality, including faecal egg counts, tick resistance indices,etc.]

27.1.2 diseases due to agents other than in 27.1.1

[free format field; specify comparative incidence and/or mortality.]

GLOSSARY

Management terms

Intensive (pigs)

High input systems characteristic of developed countries.

Nomadism

The system in which the livestock and their owners/herders move from location to location throughout the year, with no single, fixed base.

Semiferal (buffaloes)

As in Borneo. The animals are kept as a capital investment, and are captured and/or killed when cash is required.

Semi-intensive (pigs)

Breeding stock are kept on grass; growing/finishing pigs are in pens/houses.

Transhumance

The system in which the livestock and their owners/herders occupy a home base for a substantial portion of the year, and migrate to other locations for the rest of the year.

Village or smallholder agriculture

Small farms or communally owned lands in close proximity to centres of human population. Generally, farming is both arable and livestock.

Wool

composition

true wool: the undercoat of many breeds, but the whole fleece of the Merino; lacks a medulla, and usually tightly crimped.

heterotypes; intermediate between true wool and kemp; medullated in the widest part of the fibre (summer growth); no medulla in the narrower part of the fibre (winter growth).

kemps: fibres with a diameter of approximately 100 micrometres and a wide medulla.

hair.: medullated for the full length of the fibre, and the medulla occupies .80% of the diameter.

processing type

Merino wool: <23 micrometres in diameter

crossbred wool: any wools other than those of Merino quality used in. the manufacture of clothing, furnishings and drapery.

carpet wool: undercoat + heavily medullated heterotypes + kemp; coarser than crossbred wool.

Terrestrial environment (biomes)

Desert biome

Semi-desert: Woody shrubs and grasses. Includes thorntree semidesert in areas that are transitional to forest. Found in dry climates of the tropics, subtropics and mid latitudes. Large annual soil-water deficit. Mean annual precipitation usually 10-25 cm.

Dry desert: Widely scattered desert shrubs with bare ground intervening. Found in dry desert climate in tropical and mid latitudes. Large soil-water deficit. Mean annual precipitation usually <10 cm.

Grassland biome

Middle latitude grassland: This includes the two types defined below.

Tall-grass prairie: Dense growth of tall grasses and herbs. Found in moist subtropical and moist continental climates. Mean temperature of coldest month <10 C; mean temperature of warmest month >l8 C. Mean monthly precipitation >3 cm.

Short grass (steppe): Short sparse grasses. Found in semiarid and subhumid climates of mid-latitude plains. Evaporation exceeds precipitation, on average, throughout the year; no water surplus. Mean annual precipitation usually 25-76 cm.

Forest biome

Coniferous forest = Needleleaf forest defined below.

Mediterranean woodland and scrub: = Sclerophyll forest defined below.

Monsoon forest: Open forest of tropical lands. Many trees are deciduous: shed leaves in the low-sun season. There are dry cool and wet monsoon seasons. Average temperature of every month =>18 C. Rainfall of driest month <6 cm.

Mid-latitude deciduous forest: Broadleaf, deciduous trees which shed leaves in winter. Substantial soil-water surplus. Found in mild, humid (mesothermal) climates and snowy-forest microthermal climates. Average temperature of coldest month <10 C; average of warmest month >l8 C.

Needleleaf forest (Coniferous forest): Needleleaf evergreen trees forming dense forest in high latitudes. Long, very cold winters (except on west coast of continents). Average temperature of coldest month <10 C: average of warmest month >18 C.

Sclerophyll forest (Mediterranean woodland and scrub); Open forest of hard-leaved, evergreen trees. Found in mid-latitude regions with very dry summers and moist winters. Precipitation of the driest month of summer <3 cm. Precipitation of the wettest month of winter is at least three time as much as in the driest month of summer.

Tropical deciduous forest = Monsoon forest defined above.

Tropical rainforest: Tall, smooth-barked, evergreen trees with high crowns. Found in warm, wet, equatorial, tropical climates with a large water surplus. Average temperature of every month =>18 C. Rainfall of driest month =>6 cm.

Tropical scrub forest: Also known as thorn woodland, thorn forest and thorntree semidesert. The trees and shrubs are deciduous, shedding leaves during the dry season. Examples are the caatinga of northheast Brazil and the dornveldt of South Africa.

Savanna biome

Tropical savanna woodland: Scattered trees with grassland. e.g. orchard bush of West Africa.

Found in tropical climates with a long dry season and a short wet season. Average temperature of every month =>l8 C. Annual rainfall exceeds annual evaporation; at least one month has less than 6 cm of rain.

Tundra biome

Arctic tundra: Treeless landscape with sedges, grasses, mosses and flowering herbs. Found in the severely cold climate of the subarctic zone. Mean temperature of the warmest month >0 and <10 C.

Alpine tundra: Similar to arctic tundra. Occurs at high altitudes, above the tree line, and in a wide range of latitudes. Climate similar to that of arctic tundra.

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