

Appendix I**Regional Membership of OIE Member Countries**

AFRICA	AMERICAS	ASIA	EUROPE
ALGERIA	ARGENTINA	AUSTRALIA	ALBANIA
ANGOLA	BARBADOS	BANGLADESH	ANDORRA
BENIN	BELIZE	BHUTAN	ARMENIA
BOTSWANA	BOLIVIA	BRUNEI	AUSTRIA
BURKINA FASO	BRAZIL	CAMBODIA	AZERBAIJAN
BURUNDI	CANADA	CHINA (PEOPLE'S REP. OF)	BELARUS
CAMEROON	CHILE	INDIA	BELGIUM
CENTRAL AFRICAN REP.	COLOMBIA	INDONESIA	BOSNIA AND HERZEGOVINA
CHAD	COSTA RICA	JAPAN	BULGARIA
COMOROS	CUBA	KOREA (REPUBLIC OF)	CROATIA
CONGO	DOMINICAN (REP.)	KOREA (DEM. PEOPLE'S REPUBLIC OF)	CYPRUS
CONGO (DEM. REP. OF THE)	ECUADOR	LAOS	CZECH REPUBLIC
COTE D'IVOIRE	EL SALVADOR	MALAYSIA	DENMARK
DJIBOUTI	GUATEMALA	MONGOLIA	ESTONIA
EGYPT	GUYANA	MYANMAR	FORMER YUG. REP. OF MACEDONIA
EQUATORIAL GUINEA	HAITI	NEPAL	FINLAND
ERITREA	HONDURAS	NEW CALEDONIA	FRANCE
ETHIOPIA	JAMAICA	NEW ZEALAND	GEORGIA
GABON	MEXICO	PAKISTAN	GERMANY
GHANA	NICARAGUA	PHILIPPINES	GREECE
GUINEA	PANAMA	SINGAPORE	HUNGARY
GUINEA-BISSAU	PARAGUAY	SRI LANKA	ICELAND
KENYA	PERU	TAIPEI CHINA	IRELAND
LESOTHO	SURINAM	THAILAND	ISRAEL
LIBYA	TRINIDAD AND TOBAGO	VANUATU	ITALY
MADAGASCAR	UNITED STATES OF AMERICA	VIETNAM	KAZAKHSTAN
MALAWI	URUGUAY		KIRGHIZISTAN
MALI	VENEZUELA		LATVIA
MAURITANIA			LITHUANIA
MAURITIUS			LUXEMBOURG
MOROCCO	MIDDLE EAST		MALTA
MOZAMBIQUE	AFGHANISTAN		MOLDAVIA
NAMIBIA	BAHRAIN		NORWAY
NIGER	IRAN		POLAND
NIGERIA	IRAQ		PORTUGAL
RWANDA	JORDAN		ROMANIA
SAO TOME AND PRINCIPE	KUWAIT		RUSSIA
SENEGAL	LEBANON		SERBIA AND MONTENEGRO
SIERRA LEONE	OMAN		SLOVAKIA
SOMALIA	QATAR		SLOVENIA
SOUTH AFRICA	SAUDI ARABIA		SPAIN
SUDAN	SYRIA		SWEDEN
SWAZILAND	TURKEY		SWITZERLAND
TANZANIA	UNITED ARAB EMIRATES		TADJIKISTAN
TOGO	YEMEN		THE NETHERLANDS
TUNISIA			TURKMENISTAN
UGANDA			UKRAINE
ZAMBIA			UNITED KINGDOM
ZIMBABWE			UZBEKISTAN

Appendix II

Do you agree with these proposed definitions as applicable to livestock biotechnology?

Proposed Definitions:

A) "biotechnology" means the application of science and engineering in the direct or indirect use of living organisms or parts or products of living organisms in their natural or modified forms.

B) "living modified organism" means any living organism that possesses a novel combination of genetic material obtained through the use of:

(i) *in vitro* nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and direct injection of nucleic acid into cells or organelles; or

(ii) techniques involving the fusion of cells beyond the taxonomic family, that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection.

	Global		Africa		America		Asia		Europe		Middle East	
Yes	81	89%	23	96%	15	88%	12	86%	29	85%	2	100%
No	9	10%	1	4%	2	12%	2	14%	4	12%	0	0%
Did Not Respond (DNR)	1	1%	0		0	0%	0	0%	1	3%	0	0%
If no – suggest an acceptable definition												
Specify	10		1		3		3		3		0	

Key consideration

2 Please score the following considerations as they pertain to the application of genetic engineering to animals. For each topic listed below circle a score on a scale of 1 to 5, where 1 indicates unimportant considerations, and 5 indicates very important considerations.

	Global		Africa		America		Asia		Europe		Middle East	
	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
Animal welfare	303	3,33	66	2,75	65	3,82	41	2,93	124	3,65	7	3,50
Economic aspects	334	3,67	99	4,13	68	4,00	51	3,64	109	3,21	7	3,50
Food safety	365	4,01	88	3,67	72	4,24	53	3,79	142	4,18	10	5,00
Environmental impact	353	3,88	87	3,63	74	4,35	47	3,36	137	4,03	8	4,00
Traceability	348	3,82	91	3,79	73	4,29	49	3,50	125	3,68	10	5,00
Nanotechnology	248	2,73	60	2,50	55	3,24	34	2,43	90	2,65	9	4,50
Human health (other than food)	362	3,98	98	4,08	72	4,24	46	3,29	136	4,00	10	5,00
Animal health	384	4,22	106	4,42	81	4,76	51	3,64	138	4,06	8	4,00
Regulatory controls	351	3,86	92	3,83	74	4,35	52	3,71	127	3,74	6	3,00
Xenotransplantation	308	3,38	66	2,75	69	4,06	43	3,07	123	3,62	7	3,50

Appendix II (contd)

3 Do the animal health regulatory administrations and/or agencies in your country have the capability to conduct risk analysis (risk assessment, risk communication, risk management) on biotechnology derived livestock and biotechnology products?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	36	40%	4	17%	6	35%	5	36%	20	59%	1	50%
No	53	58%	20	83%	11	65%	8	57%	13	38%	1	50%
DNR	2	2%	0	0%	0	0%	1	7%	1	3%	0	0%

If yes, has a National framework for conducting risk analysis on biotechnology derived livestock and biotechnology products been developed?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	23	64%	1	25%	4	66%	5	100%	13	65%	0	0%
No	12	33%	3	75%	1	17%	0	0%	7	35%	1	100%
DNR	1	3%	0	0%	1	17%	0	0%	0	0%	0	0%

If no, what are the reasons for not performing risk analysis for decision-making process pertaining to biotechnology derived livestock and biotechnology products?

	Global		Africa		America		Asia		Europe		Middle East	
Lack of knowledge	22	26%	6	27%	2	13%	6	50%	6	27%	2	50%
Training	44	53%	10	46%	9	56%	5	42%	10	46%	2	50%
Others (specify):	18	21%	6	27%	5	31%	1	8%	6	27%	0	0%

4 Do the animal health authorities in your country have a dedicated unit that conducts risk analysis pertaining to biotechnology derived livestock and biotechnology products?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	14	15%	2	8%	3	18%	3	21%	6	18%	0	0%
No	75	83%	22	92%	14	82%	10	72%	27	79%	2	100%
DNR	2	2%	0	0%	0	0%	1	7%	1	3%	0	0%

If no, which unit is conducting risk analysis?

	Global		Africa		America		Asia		Europe		Middle East	
Import-Export unit	19	23%	6	26%	3	20%	4	45%	5	15%	1	50%
Epidemiology and Surveillance unit	24	29%	7	31%	4	27%	1	10%	11	33%	1	50%
External consultant	9	11%	3	13%	1	7%	0	0%	5	15%	0	0%
Others (specify)	30	37%	7	30%	7	46%	4	45%	12	37%	0	0%

5 What factors are taken into consideration when determining risk associated with biotechnology derived livestock and biotechnology products?

	Global		Africa		America		Asia		Europe		Middle East	
Animal Health	66	26%	18	25%	11	25%	9	22%	26	28%	2	34%
Food Safety	69	26%	20	29%	10	23%	10	24%	27	29%	2	33%
Environmental impact	58	23%	15	21%	8	19%	9	22%	24	25%	2	33%
Economic consideration	27	11%	11	15%	2	5%	6	15%	8	8%	0	0%
Others (specify)	24	9%	4	6%	10	23%	5	12%	5	5%	0	0%
DNR	12	5%	3	4%	2	5%	2	5%	5	5%	0	0%

Appendix II (contd)

6 Have the animal health authorities conducted (or received a request to conduct) a risk analysis on biotechnology derived livestock or biotechnology products?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	23	25%	3	13%	7	41%	4	29%	9	26%	0	0%
No	66	73%	20	83%	10	59%	10	71%	24	71%	2	100%
DNR	2	2%	1	4%	0	0%	0	0%	1	4%	0	0%

If yes, specify what commodity

	Global		Africa		America		Asia		Europe		Middle East	
Not able to disclose	3	9%	1	33%	1	8%	1	20%	0	0%	0	0%
Cloned animal	3	9%	0	0%	2	15%	0	0%	1	20%	0	0%
Transgenic animal	7	21%	0	0%	3	23%	1	20%	3	60%	0	0%
Biotechnology products (specify)	17	52%	2	67%	6	46%	2	40%	0	0%	0	0%
Others (specify)	3	9%	0	0%	1	8%	1	20%	1	20%	0	0%

7 Do the animal health authorities in your country make their risk analysis document available for peer review or for public consultation?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	25	27%	6	25%	7	41%	4	29%	8	24%	0	0%
No	60	66%	16	67%	10	59%	10	71%	23	67%	1	50%
DNR	6	7%	2	8%	0	0%	0	0%	3	9%	1	50%

If yes, what means of dissemination are used:

	Global		Africa		America		Asia		Europe		Middle East	
Official government publication	14	38%	4	66%	3	23%	3	42%	4	37%	0	0%
Electronic version	10	27%	1	17%	3	23%	2	29%	4	36%	0	0%
Others (specify)	13	35%	1	17%	7	54%	2	29%	3	27%	0	0%

and who conducts the peer review:

	Global		Africa		America		Asia		Europe		Middle East	
Internally within the Veterinary Services	18	45%	5	72%	6	40%	3	43%	4	37%	0	0%
External reviewers	10	25%	1	14%	4	27%	1	14%	4	36%	0	0%
Others (specify)	12	30%	1	14%	5	33%	3	43%	3	27%	0	0%

8 Do you consider the "Guidelines for risk analysis" contained in the OIE Terrestrial Animal Health Code, adequate to help carry out an import risk analysis on biotechnology-derived animals or biotechnology-derived products?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	63	69%	19	79%	8	47%	9	65%	26	76%	1	50%
No	18	20%	3	13%	8	47%	3	21%	4	12%	0	0%
DNR	10	11%	2	8%	1	6%	2	14%	4	12%	1	50%

If no, how can it be improved?

	Global	Africa	America	Asia	Europe	Middle East
Specify	18	3	8	3	4	0

Appendix II (contd)

9 Has your country produced biotechnology-derived animals or biotechnology-derived products for use on animals?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	31	34%	5	21%	6	35%	6	43%	14	41%	0	0%
No	58	64%	19	79%	11	65%	8	57%	18	53%	2	100%
DNR	2	2%	0	0%	0	0%	0	0%	2	6%	0	0%

10 Do you have the following capabilities in your country?

	Global		Africa		America		Asia		Europe		Middle East	
Cloning	23	17%	1	4%	6	23%	6	23%	10	18%	0	0%
Transgenic production	27	20%	2	8%	4	15%	6	23%	15	26%	0	0%
Products of biotechnology for use in animals (e.g. vaccines and/or drugs)	38	28%	6	23%	5	19%	9	35%	18	31%	0	0%
DNR	49	35%	17	66%	11	43%	5	19%	14	25%	2	100%

11 Do you have a regulatory framework in place to govern the use of the above?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	44	48%	6	25%	9	53%	8	43%	21	62%	0	0%
No	45	50%	18	75%	8	47%	6	57%	11	32%	2	100%
DNR	2	2%	0	0%	0	0%	0	0%	2	6%	0	0%

If yes, briefly please describe the framework and list the Administrations and/or Agencies and pertinent legislation(s) involved

Specify	39	5	8	7	19	0
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12 Is research being conducted in your country into biotechnology-derived animals and products including vaccines and drugs?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	43	47%	6	25%	7	41%	9	64%	20	59%	1	50%
No	46	51%	17	71%	10	59%	5	36%	13	38%	1	50%
DNR	2	2%	1	4%	0	0%	0	0%	1	3%	0	0%

13 Do you produce or use any animal vaccines in your country that are biotechnology-derived?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	40	44%	4	17%	7	41%	7	50%	21	62%	1	50%
No	49	54%	19	79%	10	59%	7	50%	12	35%	1	50%
DNR	2	2%	1	4%	0	0%	0	0%	1	3%	0	0%

Appendix II (contd)

If yes, what types of biotechnology-derived animal vaccines are available?

Viral vectored vaccines which include antigen(s) from unrelated organisms	26	27%	2	50%	5	28%	4	19%	15	29%	0	0%
Bacterial vectored vaccines which include antigen(s) from unrelated organisms	16	16%	1	25%	2	11%	5	24%	8	15%	0	0%
Vaccines which have deleted antigen(s) to differentiate infected animals from vaccinates (DIVA)	22	23%	1	25%	3	17%	3	14%	14	26%	1	100%
Vaccines which include recombinant proteins	26	27%	0	0%	6	33%	6	28%	14	26%	0	0%
DNA vaccines	6	6%	0	0%	2	11%	2	10%	2	4%	0	0%
Other	1	1%	0	0%	0	0%	1	5%	0	0%	0	0%

14 How are biotechnology-derived vaccines and/or drugs generally perceived by the public in your country?

	Global		Africa		America		Asia		Europe		Middle East	
Safe	12	13%	4	17%	1	6%	3	21%	4	11%	0	0%
Controversial	25	27%	5	21%	5	28%	4	29%	10	29%	1	50%
Public mostly unaware	39	41%	11	46%	7	38%	6	43%	15	43%	0	0%
Others (specify)	11	12%	2	8%	5	28%	0	0%	2	6%	1	50%
DNR	7	7%	2	8%	0	0%	1	7%	4	11%	0	0%

15 Do you have livestock cloning and/or transgenic animal production facilities in your country?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	28	31%	0	0%	5	29%	6	43%	17	50%	0	0%
No	60	66%	22	92%	12	71%	8	57%	16	47%	2	100%
DNR	3	3%	2	8%	0	0%	0	0%	1	3%	0	0%

16 Are biotechnology-derived animals or their products permitted in the food or feed supply in your country?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	22	24%	5	21%	4	24%	6	43%	7	21%	0	0%
No	64	72%	17	71%	13	76%	6	43%	26	79%	2	100%
DNR	4	4%	2	8%	0	0%	2	14%	0	0%	0	0%

17 Is there a public support for cloning of animals?

	Global		Africa		America		Asia		Europe		Middle East	
Yes	11	12%	0	0%	2	12%	4	29%	5	15%	0	0%
No	72	79%	22	92%	13	76%	7	50%	28	82%	2	100%
DNR	8	9%	2	8%	2	12%	3	21%	1	3%	0	0%

Appendix II (contd)

20

If Yes, would there be a support for cloning for

	Global	Africa	America	Asia	Europe	Middle East
Rescue of endangered species	7 39%	0 0%	2 33%	2 33%	3 50%	0 0%
Generating stem cells	7 39%	0 0%	2 33%	2 33%	3 50%	0 0%
Pet cloning	2 11%	0 0%	1 17%	1 17%	0 0%	0 0%
Food product homogeneity	2 11%	0 0%	1 17%	1 17%	0 0%	0 0%

18 Are there transgenic animals present in your country?

	Global	Africa	America	Asia	Europe	Middle East
Yes	22 24%	0 0%	3 18%	4 29%	15 44%	0 0%
No	67 74%	24 100%	14 82%	10 71%	17 50%	2 100%
DNR	2 2%	0 0%	0 0%	0 0%	2 6%	0 0%

If Yes, what purpose are they generated for

	Global	Africa	America	Asia	Europe	Middle East
Altered Nutrient Content	4 13%	0 0%	1 14%	2 22%	1 53%	0 0%
Biopharmaceuticals	14 45%	0 0%	3 43%	3 34%	8 33%	0 0%
Disease resistance	9 29%	0 0%	1 14%	3 33%	5 7%	0 0%
Environmental benefits	4 13%	0 0%	2 29%	1 11%	1 7%	0 0%

19 Does your country have the laboratory capacity to identify and detect transgenes in the food/feed supply?

	Global	Africa	America	Asia	Europe	Middle East
Yes	38 42%	2 8%	6 35%	7 50%	22 65%	1 50%
No	51 56%	22 92%	11 65%	6 43%	11 32%	1 50%
DNR	2 2%	0 0%	0 0%	1 7%	1 3%	0 0%

20 How are biotechnology-derived animals generally perceived by the public in your country?

	Global	Africa	America	Asia	Europe	Middle East
Safe	2 2%	1 4%	0 0%	0 0%	1 2%	0 0%
Controversial	53 52%	10 41%	10 50%	8 53%	24 59%	1 50%
Public generally unaware	30 29%	9 38%	5 25%	5 33%	11 27%	0 0%
Others (specify	14 14%	4 17%	5 25%	1 7%	3 7%	1 50%
DNR	3 3%	0 0%	0 0%	1 7%	2 5%	0 0%

Appendix II (contd)

	Global		Africa		America		Asia		Europe		Middle East	
English	61	67%	12	50%	6	35%	13	93%	28	82%	2	100%
French	18	20%	12	50%	0	0%	1	7%	5	15%	0	0%
Spanish	11	12%	0	0%	11	65%	0	0%	0	0%	0	0%
Other	1	1%	0	0%	0	0%	0	0%	1	3%	0	0%
Country Questionnaire Received	91	54%	24	49%	17	61%	14	54%	34	69%	2	15%
Member Countries	165		49		28		26		49		13	

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