

AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Other Proposals

A. PROPOSAL

Inclusion of Rana arfaki, R. blythii, R. cancrivora, R. crassa, R. cyanophlyctis, R. grunniens, R. ibanorum, R. ingeri, R. kuhlii, R. limnocharis, R. macrodon (incl. R. microtyimpanum), R. magna, R. malesiana, R. modesta, R. paramacrodon (incl. R. kenepaiensis), R. rugulosa in Appendix II.

B. PROPONENT

The Federal Republic of Germany.

C. SUPPORTING STATEMENT

1. Taxonomy

11. Class: Amphibia

12. Order: Anura

13. Family: Ranidae

14. Species:

1. Rana arfaki Meyer, 1874
2. Rana blythii Boulenger, 1920
3. Rana cancrivora Gravenhorst, 1829
4. Rana crassa Jerdon, 1853
5. Rana cyanophlyctis Schneider, 1799
6. Rana grunniens Sonnini & Latreille, 1801
7. Rana ibanorum Inger, 1964
8. Rana ingeri Kiew, 1978
9. Rana kuhlii Tschudi, 1838
10. Rana limnocharis Boie, 1835
11. Rana macrodon Dumeril & Bibron, 1841
12. Rana magna Stejneger, 1901
13. Rana malesiana Kiew, 1984
14. Rana modesta Boulenger, 1882
15. Rana paramacrodon Inger, 1966
16. Rana rugulosa Wiegmann, 1835

15: Common Names: English: large river frog, spade-foot frog, Malayan giant frog, mangrove frog, ridged river frog, confluence frog, Malayan aquatic frog, padifield frog, Malaysian frog, coarse frog, ridged frog, skittering frog, paddy frog, steaked cricket frog, crab-eating frog, Blyth's frog

French:

Spanish:

German: Zahnfrosch, (Südostasiatischer) Reisfrosch, Blyth-Frosch
 Indonesian: Kata sawah, Kodok totol, Kodok rawa, Kodok ijo
 Malay: Katak demam, Katak bakau, Katak sungai batu, Katak kuala, Katak air, Katak sawah, Katak Malaysia, Katak lembah, Katak kulit kasar

16. Code Numbers:

2. Biological Data

See also Annex 1.

21. Distribution: Southern Iran through Pakistan, India, the Himalayas, S-China east to S-Japan, south to Sunda Region, Philippines and New Guinea.

SE Asia represents the species distribution focus, with greatest diversity of concerned taxa in Indonesia.

22. Population: Some species widespread and reputedly still common in some areas (e.g. R. limnocharis), others with more restricted distribution and rare (e.g. R. paramacrodon). In general, due to habitat loss and frogs' legs harvesting populations seem to decrease drastically in some areas of SE Asia, in particular in exporting countries (Dutta, 1990; Kiew, 1984; Niekisch, 1986; Wirjoatmodjo, 1991 in lit.). In Malaysia 24 SE Asian Rana species are considered as "vulnerable", 4 species as "indeterminate" (Kiew, 1984b) including 9 species listed under 14.

23. Habitat: Detailed information about habitat and other ecological parameters are scarce - and not always reliable because of problems in systematics and taxonomy (see 34.) - but as far as known two simplified habitat types are generally preferred (see a.o. Berry, 1975; Dutta, 1990; Inger, 1954, 1966, 1990 in lit.; Kiew, 1984b; van Kampen, 1923; Zweifel & Tyler, 1982):

- 1) open swampy country, partly cultivated areas: R. cancrivora, R. crassa, R. cyanophlyctis, R. limnocharis, R. rugulosa.
- 2) forests or secondary growth along rivers etc.: R. arfaki, R. blythii, R. grunniens, R. ibanorum, R. ingeri, R. kuhlii, R. macrodon, R. magna, R. malesiana, R. modesta, R. paramacrodon.

Most of the taxa occurring in habitat type 1) belong to the so called greenfrog s.l. ecotype, mainly aquatic species living in specimens aggregations throughout their activity period; high densities of individuals and high reproduction rates are typical. Frogs preferring habitat type 2) are characterized as brownfrog s.l. ecotypes, i.e. species mainly terrestrial or semiaquatic, tending to a more solitary way of life, with generally high reproduction rates (Martens, 1991).

3. Trade Data

31. National Utilization: Species concerned are collected in order to utilize frogs' legs for human consumption. Harvesting and consumption of wild indigenous species is reported from several SE Asian countries (Martens, 1991):

Thailand

R. limnocharis

Philippines

R. cancrivora

R. limnocharis

R. magna

Malaysia

R. blythii

R. cancrivora

R. ingeri

R. rugulosa

Bangladesh

R. cyanophlyctis

R. hexadactyla

R. limnocharis

R. tigerina

India

R. crassa

R. cyanophlyctis

R. hexadactyla

R. limnocharis

R. tigerina

Indonesia

R. arfaki

R. blythii

R. cancrivora

R. grunniens

R. ibanorum

R. ingeri

R. kuhlii

R. limnocharis

R. macrodon

R. magna

R. malesiana

R. modesta

R. paramacrodon

However, it is not clear which individual species is utilized for local consumption and for export respectively and to what extent (Kiew, 1984b; Niekisch, 1986; Wirjoatmodjo, 1991 in lit.). According to traders' information (A.P.C.I., 1991 in lit.; MA Germany, 1991; MA Belgium, 1991 in lit.; see also Martens, 1991) beside R. hexadactyla and R. tigerina - already included in Appendix II of CITES - only R. blythii, R. cancrivora and R. macrodon are exported from Indonesia, but species identification is difficult since frogs' legs in trade are unskinned and deep-frozen (see 34).

Other forms of Rana utilization seem to be of very minor importance (e.g. pet trade; Martens, 1991).

32. Legal International Trade: Main exporting countries of SE Asian Rana species are Indonesia, India and Bangladesh (Niekisch, 1986; MA of Denmark, Spain, Belgium, Luxembourg, 1991 in lit.; import statistics of Germany, 1987-90); other taxa are exported in far smaller quantities by e.g. Turkey, China, Egypt (a complete list of countries of origin is given by Serrec, 1988a; MA of Italy, 1991 in lit.). Frogs' legs are above all imported by USA, France, Belgium and the Netherlands (Serrec, 1988a) and then partly distributed to other countries.

Quantitative data on frogs' legs trade seems to be overall monitored and evaluated only for CITES species R. hexadactyla and R. tigerina (IUCN/WCMC statistics; Bräutigam, Luxmore, 1991 in lit.). Regarding other SE Asian Rana species import data of EC countries - if ever available - often are not classified to species or data are only given for short sample time periods.

The most updated information of the MA of Italy and Spain (1991 in lit.) provides some data about the price of frogs' legs declared at the customs: e.g. in Italy unspecified imports from the Netherlands assumed to derive from SE Asia are much cheaper (3829 Lira/kg) than those from Turkey (5659 Lira/kg) in 1991; in Spain the difference between origins of Indonesia and those from Egypt is even larger (361 Pts./kg versus 1003 Pts./kg, 1991). In France imports from Indonesia are cheaper than those from Italy, the price varies generally between 18 and 45 FF/kg (Serrec, 1988a).

Concerning trade volume in frogs' legs from SE Asia the study of Serrec (1988a, 1988b) provides the most updated overview until 1987 (see also Martens, 1991).

Table 1: Export of frozen frogs' legs from main exporting countries (Bangladesh data are based on different sources). All figures in tonnes (t). According to Serrec (1988a).

Year	India	Bangladesh	Indonesia
1963	514	-	-
1964	332	-	-
1965	44	-	-
1966	557	-	-
1967	786	-	-
1968	425	-	-
1969	854	-	-
1970	2545	-	-
1971	1451	-	-

1972	1823	-	-
1973	2698	-	-
1974	1454	-	-
1975	1317	-	-
1976	3170	-	-
1977	2834	372	-
1978	3570	1184	-
1979	3764	987	-
1980	3095	675	1517
1981	4368	1204	1612
1982	2271	(IX 81 - IX 82) 3498	2776
1983	3658	(IX 82 - IX 83) 2587	3262
		resp. 3100	
1984	2834	(IX 83 - IX 84) 2511	2140
1985	2778	1948	2718
1986	680	2471	3690
1987	-	2512	3004

These figures clearly show a general trend in SE Asian frogs' legs trade: while exports of India/ Bangladesh have decreased (1980-87:3770t to 2512t) those from Indonesia have increased (1980-87: 1517t to 3004t). Although this opposing process did not develop continuously the tendency is obvious: trade has shifted from protected CITES species to unprotected ones (see 31.) the latter being "...heavily exploited ..." in Indonesia (Wirjoatmodjo, 1991 in lit.). Actually, this was already to be expected when CITES species R. hexadactyla and R. tigerina were included in Appendix II (see Anon., 1986a).

Considering that beside large sized species e.g. R. blythii even small taxa e.g. R. cancrivora are harvested according to traders' information (but see 34.) the number of Indonesian specimens killed only in 1987 can be estimated to 60.000.000 - 82.000.000 individuals (Martens, 1991) plus an unknown percentage of "wastage" frogs due to lack of export quality (up to 50%; Niekisch, 1986).

33. Illegal Trade: Apart from national protection measures established by countries of origin (see 41.) only the Federal Republic of Germany as included SE Asian Rana species others that CITES taxa in its (Federal) Species Conservation Act (1987). By now, one violation of this regulation has been recorded in 1989 regarding an illegal import from Indonesia via other EC countries. However, illegal imports from EC countries into Germany are presumed to be more common than recorded.

In general, illegal trade in CITES Rana species seems to be probable as long as traders' declaration (concerning non-CITES species) cannot be verified (see 34.).

34. Potential Trade Threats: Estimations of potential trade threats to wild SE Asian Rana species are generally rather difficult as:

- 1) Rana systematics and taxonomy are still under discussion (see a.o. Frost, 1985) - a.o. regarding cryptic ("biochemical") species (for observations in European taxa see Günther, 1990).
- 2) data on essential biological parameters e.g. on distribution, ecology, population genetics are insufficient or lacking (Martens, 1991).

Accordingly, the impact of harvesting on individual species remains uncertain as long as basic information on SE Asian Rana taxa is scarce.

Studies in India/Bangladesh indicate, however, that indiscriminate collection of frogs' legs lead to a decrease of wild populations and as a result to negative environmental effects (for references see Niekisch, 1986; CITES Doc. 0348c, 1985). Chakrabarti, 1987 estimates " ... some 4,1 million metric tonnes of insects and other pests ..." normally consumed by 40.000.000 Indian R. tigerina which were (on average) annually killed for frogs' legs export between 1973 and 1984.

The importance of Rana species as predators of insects e.g. in India (Dutta, 1990) and Pakistan (Khan, 1990) has been pointed out by more recent authors, too.

For other SE Asian countries no such studies are known; however, it seems doubtful to specialists whether harvesting of wild populations is possible on a sustainable basis and they are concerned about the level of exploitation regarding the ecological equilibrium (Inger, 1990 in lit.; Wirjoatmodjo, 1991 in lit.; see also 22.).

Actually, the general threat of overcollection concerning Indonesian frog species has been already claimed by earlier authors (see Niekisch, 1986). Frog harvest has led to local increases in insect populations and a rise in the incidence of plant diseases has encouraged the use of more pesticides (Anon., 1986b).

Estimations concerning the utilization of SE Asian taxa are shared in principal by Hayes & Jennings (1989) stating that harvest of most wild frog populations has continued (worldwide) beyond the point at which harvest size can be sustained.

As species identification is nearly impossible in frozen Rana legs without biochemical (electrophoretical) methods it is highly questionable whether frog species in trade are correctly declared (see 33.). This is particularly true where many Rana species collected by locals occur in the same region or even in the same habitat.

Hence, possible overexploitation is given both for species presumed to be common and widespread and rare, possibly endemic ones. Trade control should comprise as much countries and species as possible to achieve the most effective monitoring and protection needed (Anon., 1986a; Martens, 1991).

4. Protection Status

41. National:

China: The Peoples Republic has currently established an export ban on frogs (Anon., 1989) probably including some of the Rana species concerned.

Bangladesh: Apart from CITES Rana species R. limnocharis was subject to a collecting ban imposed in 1982, 1983, 1984 and 1985 from 15 April to 15 May/15 July, but the ban was widely ignored (Niekisch, 1986).

Although Bangladesh banned the export of frogs' legs for the three years from April 1988 (Anon., 1989) large quantities of R. tigerina have been exported in 1989 (IUCN/WCMC statistics; Bräutigam, Luxmoore, 1991 in lit.).

India: All Rana species are protected under the Wildlife Act 1972 and collection of specimens was based on a quota (Niekisch, 1986). Even now a general ban on commercial killing and export of legs has been set up (Anon., 1987) large quantities of e.g. R. tigerina have been still exported in 1989 (IUCN/WCMC statistics; Bräutigam, Luxmoore, 1991 in lit.).

Malaysia: Although Malaysia is no export country it is noteworthy that all 4 species harvested for consumption (R. blythii, R. cancrivora, R. ingeri, R. rugulosa) are considered as "vulnerable" Rana species are generally not protected in Malaysia (Kiew, 1984).

Indonesia: No general species protection measures are known and accordingly "... all species are caught from the wild without restrictions." (Wirjoatmodjo, 1991 in lit.). There is no overall limit on the export of frogs and parts thereof although some species are subject to (increasing) quotas in some provinces (Indonesian "catch" quotas 1985-91; TRAFFIC Oceania 1991 in lit.).

42. International: Three Rana species not listed in detail under 14. are included in the IUCN Red List 1990 and considered as "endangered" or "vulnerable"; they are of no importance for the frogs' legs trade.
43. Additional Protection Needs: Sustainable utilization of wild Rana species, in particular in SE Asia, must be based on studies concerning their systematics, distribution and ecology in order to assess species identity and the extent of frog harvesting. Effective monitoring of traded species could be established by means of electrophoretic tests of frogs' legs samples in importing countries. Until those studies have not been carried out quotas for frogs' legs exports should be set up in order to minimize possible negative effects on wild populations and their habitats. Alternatively, established ways of frog farming/ranching should be encouraged as a possible income source for locals in case sustainable utilization of wild frog populations does not seem to be feasible (see 7).

5. Information on Similar Species

51. Other Rana species (n=7) known to be used for human consumption and international trade (see Martens, 1991):

R. catesbeiana Shaw, 1802 (USA, and introduced populations of Cuba and Indonesia)

R. dalmatina Bonaparte, 1840 (Europe)

R. esculenta Linnaeus, 1758 (Europe)

R. lessonae Cmerano, 1882 (Europe)

R. nigromaculata Hallowell, 1861 "1869" (China)

R. ridibunda Pallas, 1771 (Europe, Turkey, Egypt)

R. temporaria Linnaeus, 1758 (Europe)

Countries (regions) of origin in brackets

Species listed are exported as frozen legs and live specimens (Serrec, 1988a). In general, trade volume in Palearctic Rana taxa is by far lower than quantities

exported from e.g. Indonesia (see e.g. imports of frogs' legs into France 1973-87, Table 2).

Table 2: Imports of frogs' legs into France, 1973-87. All figures in tonnes (t). According to Serrec (1988a).

Year	Turkey	India	Indonesia	Bangladesh	Swiss	Others
1973	103	628	1509	-	-	38
1974	36	440	830	-	-	41
1975	170	521	1024	60	-	139
1976	171	1502	963	30	-	109
1977	190	1369	1306	172	-	114
1978	212	1451	1289	153	-	52
1979	141	1756	1927	151	70	68
1980	126	1761	1635	259	218	47
1981	256	1760	1935	207	226	132
1982	155	1145	902	168	170	88
1983	253	1020	2111	594	130	114
1984	147	723	1638	152	40	43
1985	272	284	2105	161	65	49
1986	297	208	2659	72	29	157
1987	165	8	2303	60	45	450
Total						
73-87	2694	14576	24136	2239	993	1641

52. Potential suppliers of frogs' legs (n = 19), i.e. Rana species reaching at least the size of the smallest taxa in trade (R. cancrivora, R. limnocharis):

R. andersonii Boulenger, 1882 (SE Asia)
R. boulengeri Günther, 1889 (China)
R. erythraea (Schlegel, 1837) (SE Asia)
R. glandulosa Boulenger, 1882 (SE Asia)
R. grisea van Kampen, 1913 (New Guinea)
R. hosii Boulenger, 1891 (SE Asia)
R. jimienensis Tyler, 1963 (New Guinea)
R. liebighii Günther, 1960 (S Asia)
R. livida (Blyth, 1855) (S Asia)
R. miopus Boulenger, 1931 (SE Asia)
R. nitida Smedley, 1931 (SE Asia)
R. oatesii Boulenger, 1892 (Burma)
R. papua Lesson, 1830 (New Guinea)
R. perezi Seoane, 1885 (SW Europe)
R. phrynoides Boulenger, 1917 (S Asia)
R. raja Smith, 1930 (SE Asia)
R. saharica Boulenger, 1913 (N Africa)
R. spinosa David, 1875 (S Asia)
R. sternosignata Murray, 1885 (S Asia)

Following non - Rana species are also used for human consumption but have not shown up in international trade:

Central-/South America: Leptodactylidae
Caudiverba caudiverba (Linnaeus, 1758)
Leptodactylus pentadactylus Laurenti, 1768

Africa: Ranidae
Conraua goliath (Boulenger, 1906)
Pyxicephalus adspersus Tschudi, 1838

Asia: Ranidae
Discodeles guppyi (Boulenger, 1884)

6. Comments from Countries of Origin

Comments have been received from CITES Management and Scientific Authorities of India (S.K. Bhattacharyya), the Philippines (C.C. Tomboc, S. R. Peñafiel), Thailand (P. Saengsakul) and Indonesia (A. Bari), in lit. 1991. Apart from a reservation of Thailand regarding Rana rugulosa all countries concerned generally agree to the proposal or support a listing of their indigenous species.

7. Additional Remarks

So far, large scale efforts to breed Rana species in captivity have mainly failed because of technical problems and/or due to lack of profits (a.o. Hayes & Jennings, 1989; CITES Doc. 0348c, 1985) except for R. catesbeiana (a.o. Longo, 1987).

The Association of Indonesian Packers and Exporters for Fisheries (A.P.C.I., 1991 in lit.), however, claims that "... extensive cultivation for frogs ..." (indigenous R. macrodon) has been established by Indonesian authorities, but the Indonesian Institute of Sciences (Wirjoatmodjo, 1991 in lit.) informed us that such efforts were "... not success in term of cost and benefit."

8. References

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Other sources:

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- CITES Doc. 0348c, 1985.
- Mr Peñafiel, CITES Management Authority of the Republic of the Philippines, 1991 in lit.
- Mr Tomboc, CITES Scientific Authority of the Republic of the Philippines, 1991 in lit.
- Mr S.K. Bhattacharyya, CITES Management Authority of India.
- Mr P. Saengsakul, CITES Management Authority of Thailand.
- Mr A. Bari, CITES Management Authority of Indonesia, 1991 in lit.

Annotated list of Rana species proposed to be included in Appendix II of CITES (see chapter 14.).

Data on distribution and size according to Boulenger (1920) and Frost (1985) if not otherwise indicated.

Rana afrika, Meyer, 1874

Distribution: New Guinea, Aru Is.

Size: up to 160 mm

Status: no information

Rana blythii, Boulenger, 1920

Distribution: Myanmar and Philippines through Thailand to Sumatra and Borneo

Size: up to 260 mm (Taylor, 1962)

Status: vulnerable in Malaysia (Kiew, 1984b); formerly abundant in primary forests in Borneo (Inger, 1966); less common today in Indonesia because of frog harvest (Witjoatmodjo, 1991 in lit.)

Rana cancrivora, Gravenhorst, 1829

Distribution: Malay Peninsula to the Philippines and the Lesser Sundas as far as Flores; Hainan I. (China); Viet Nam

Size: up to 82 mm (Inger, 1966)

Status: vulnerable in Malaysia (Kiew, 1984b); more common than R. macrodon on Malaysia peninsula (Berry, 1975); common in Indonesia according to A.P.C.I. (1991 in lit.), but getting rarer according to Wirjoatmodjo due to frog harvest (1991, in lit.)

Rana crassa, Jerdon, 1853

Distribution: SE-India, Nepal, Sri Lanka

Size: up to 112 mm

Status: like R. tigerina widely distributed in the State of Orissa (India; Dutta, 1990)

Rana cyanophlyctis, Schneider, 1799

Distribution: Southern Iran, Afghanistan, Pakistan, India, Sri Lanka and Malaysia

Size: up to 100 mm

Status: rare in Thailand (Taylor, 1962)

Rana grunniens, Sonnini & Latreille, 1801

Distribution: Java, Celebes, Amboina I.

Size: up to 146 mm

Status: no information

Rana ibanorum, Inger, 1964

Distribution: Northern Borneo

Size: up to 125 mm (Inger, 1966)

Status: vulnerable in Malaysia (Kiew, 1984b); once abundant in Borneo along rivers (Inger, 1966)

Rana ingeri, Kiew, 1978

Distribution: Java, Mentawai Island chain on Eggano, Siberut and Nias

Size: up to 100 mm

Status: vulnerable in Malaysia (Kiew, 1984b), but see distribution according to Frost (1985); getting rare in Indonesia due to frog harvest (Wirjoatmodjo, 1991 in lit.)

Rana kuhlii, Tschudi, 1838

Distribution: Assam (India), Yunnan and Taiwan through Indochina to the Greater Sundas as far as Celebes

Size: up to 90 mm (Berry, 1975)

Status: vulnerable in Malaysia (Kiew, 1984b)

Rana limnocharis, Boie, 1835

Distribution: China (Taiwan, Sichuan and south of Yangtze River and north to Shandong) to Nepal, Pakistan, India, Sri Lanka, southern Japan, Philippines, Greater Sundas Is. and the Lesser Sunda as far as Flores

Size: up to 60 mm (Berry, 1975)

Status: indeterminate in Malaysia (Kiew, 1984b)

Rana macrodon, Dumeril & Bibron, 1841

Distribution: Myanmar to Malaysia, Java, Sumatra, Borneo, Rioux Archipelago

Size: up to 125 mm (Inger, 1966)

Status: in Borneo once relatively more common than syntopic R. blythii and R. ibanorum (Inger & Greenberg, 1966); getting rare in Indonesia due to frog harvest (Wirjoatmodjo, 1991 in lit.)

Rana magna, Stejneger, 1901

Distribution: Mindanao (Philippines), but collected in Sulawesi according to Wirjoatmodjo (1991 in lit.)

Size: up to 120 mm

Status: no information

Rana malesiana, Kiew, 1984

Distribution: Malaysian subregion of the Sunda Region: Peninsular Malaysia, Singapore, Sumatra, Java, Borneo, Pualu Kundur, Palau Gallang, Great Natua I., Sinkeo I.

Size: more than 50 mm (Kiew, 1984a)

Status: vulnerable in Malaysia (Kiew, 1984)

Rana modesta, Boulenger, 1882

Distribution: Celebes (Indonesia)

Size: up to 72 mm

Status: no information

Rana paramacrodon, Inger, 1966

Distribution: western and northern Borneo, Malaysia

Size: up to 75 mm (Inger, 1966)

Status: vulnerable in Malaysia (Kiew, 1984b)

Rana rugulosa, Wiegmann, 1835

Distribution: Myanmar and S-China to Thailand; introduced in Borneo (Sabah, Malaysia)

Seize: up to 85 mm (Taylor, 1962)

Status: vulnerable in Malaysia (Kiew, 1984b); in Sabah introduced populations seem .."to explode.." locally (Inger, 1990 in lit.)

