



**Joint ISPRS Project with the United Nations
Committee of Experts on Geospatial Information Management
UN-GGIM Secretariat, New York**

**The International Society for Photogrammetry
and Remote Sensing
Study on the Status of Mapping on the World**

**Paper and presentation prepared by
Gottfried Konecny, Emeritus Prof., Leibniz University Hannover, Germany**

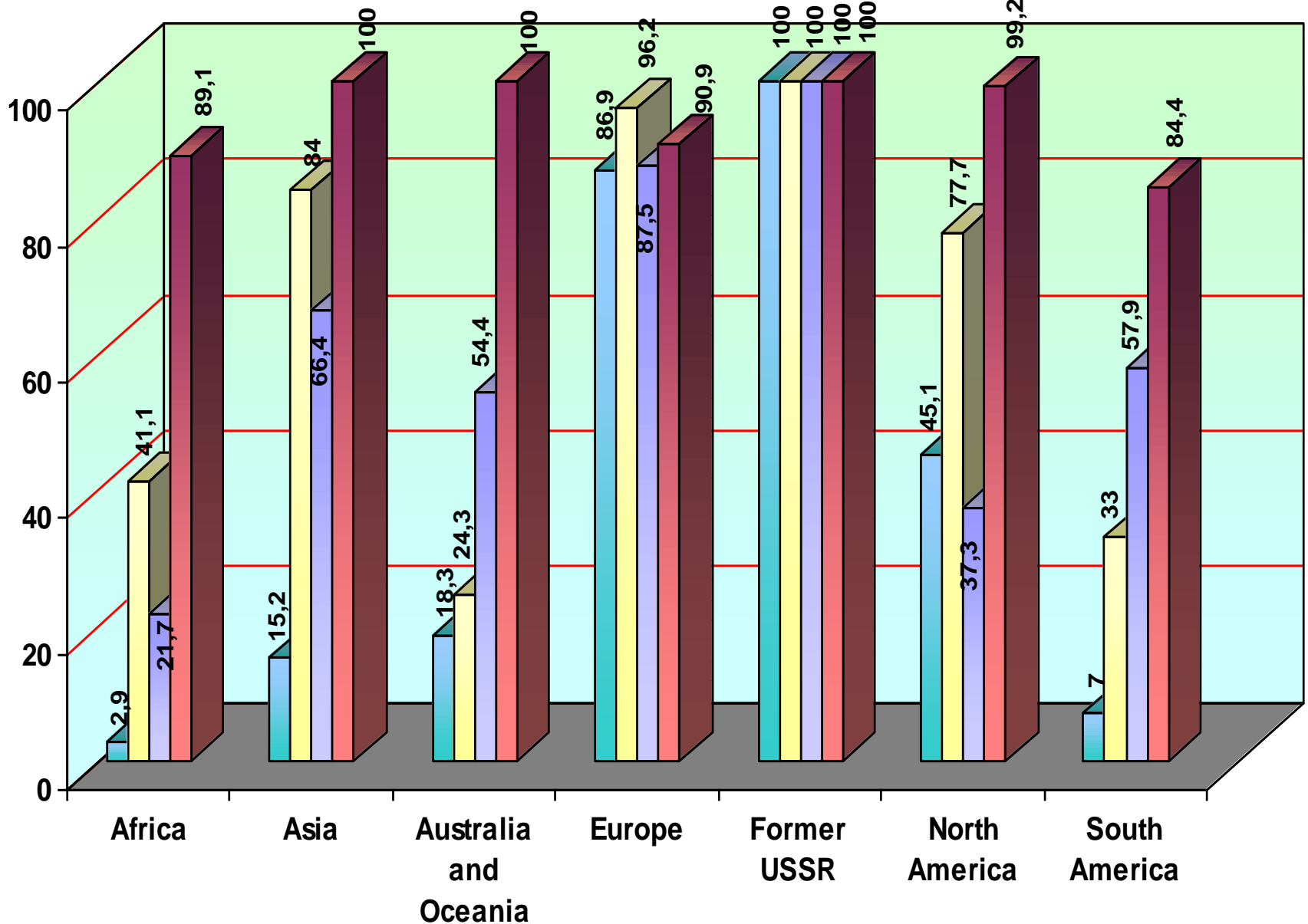
1. History of ISPRS-UNGGIM Project 2012

- 1.1. Studies by the UN Secretariat in 1968, 1974, 1980, 1987 on the Status of Mapping in the World**
- 1.2. Report on the Studies by A. Brandenberger, Laval University, Quebec, Canada at UNRCC-AP 1987 in Bangkok, published in World Cartography XX, 1990 (status of data 1986)**
- 1.3. Resolutions at UNRRCC-AP and recently at UNRRCC-AM 2009 with mandate to the Secretariat for a new study**
- 1.4. Decision of ISPRS Council in November 2011 to offer cooperation to UNGGIM, approved by Dr. Cheung in Dec 2011**

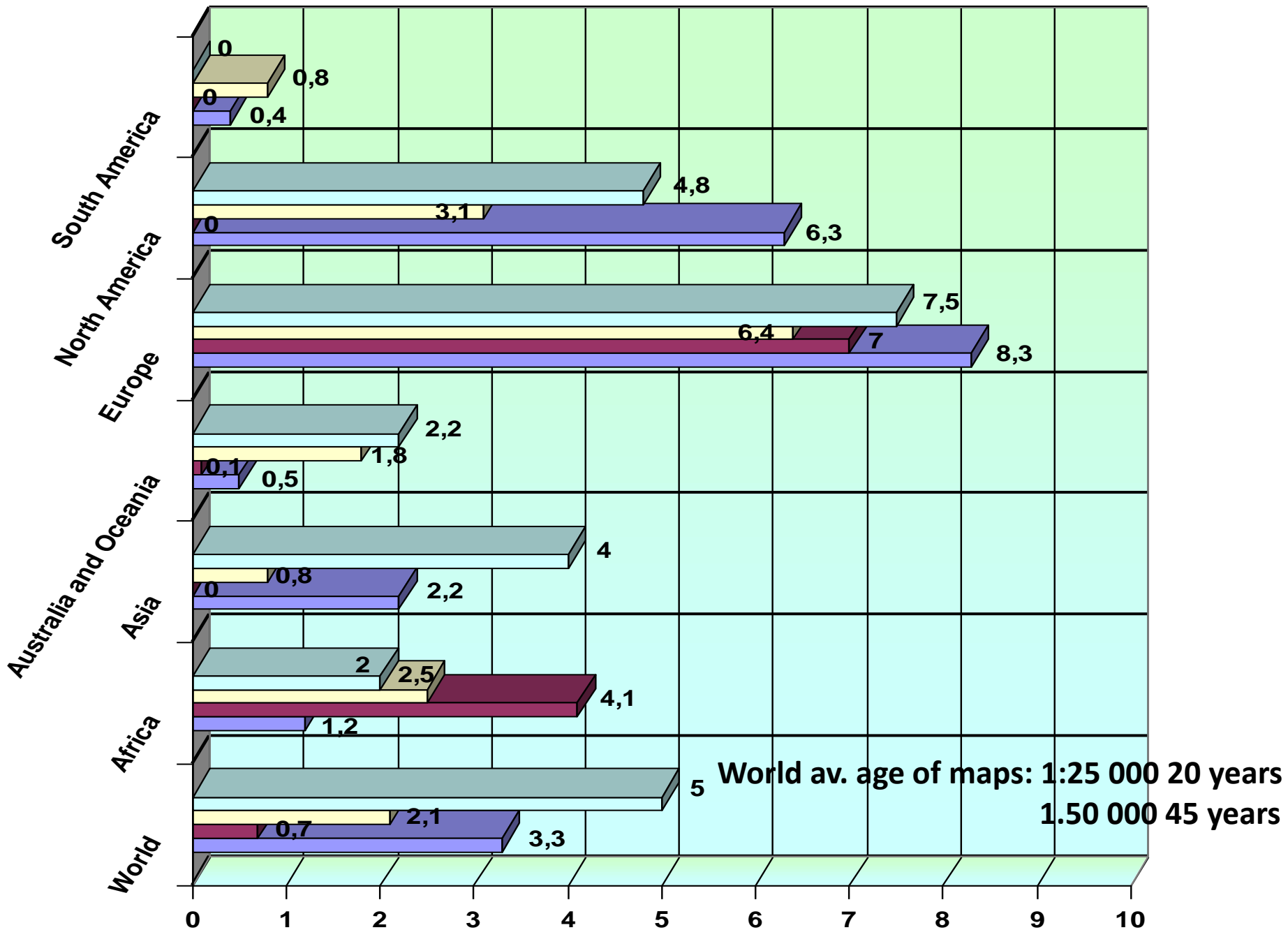
1:25 000 green , 1:50 000 yellow

1:100 000 violet , 1:200 000 red

2. Status of Topographic Mapping 1986



1:25 000 1/3; 1:50 000 1/2; 1:250 000 nearly complete

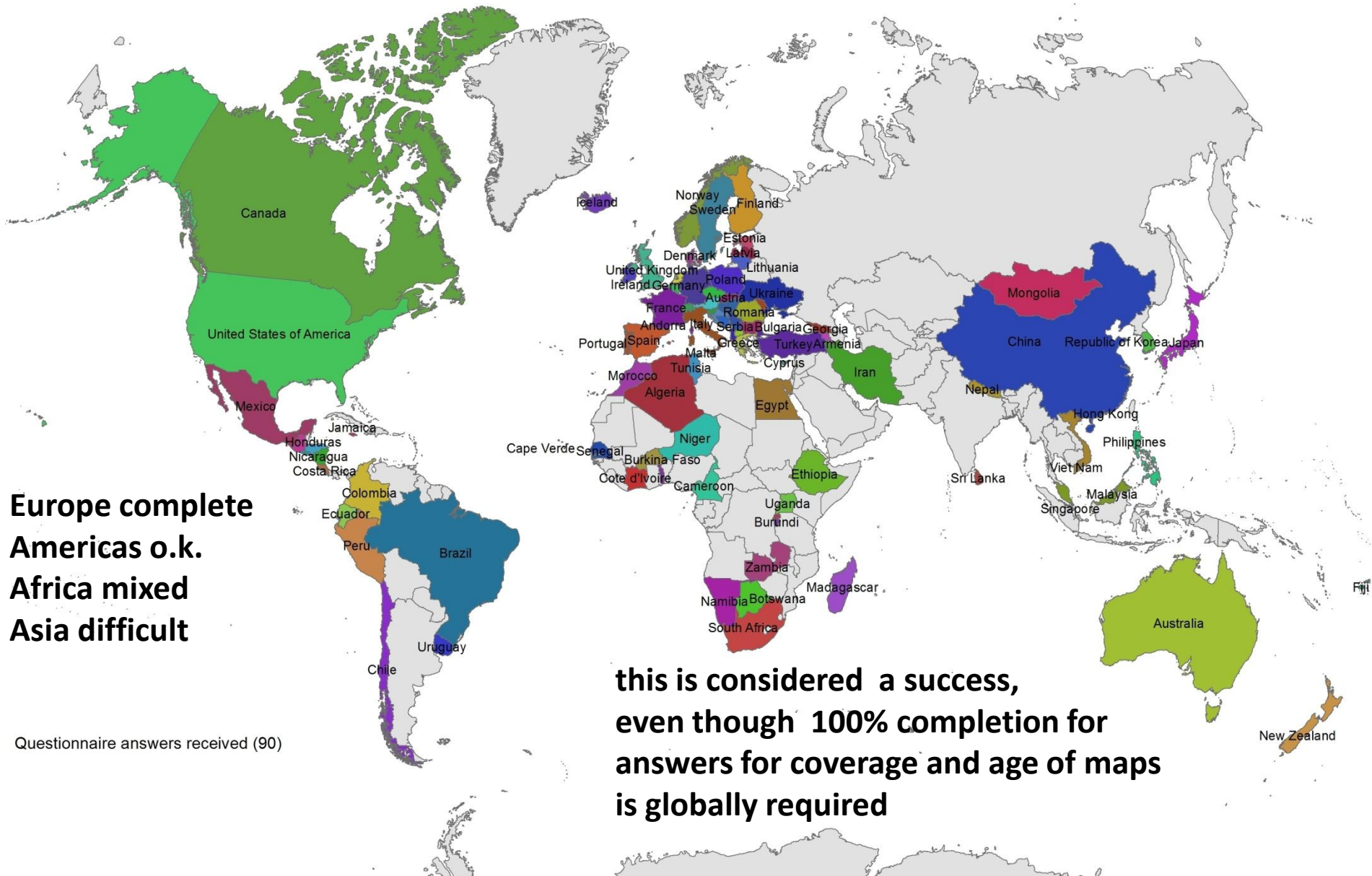


2. Map Updating 1986

3. Intermediate Results of the Study 2012

- 3.1. after the mailing of the questionnaire on April 27, 2012 by the GGIM Secretariat to UN Member Countries, 90 answers were received by January 17, 2013**
- 3.2. an analysis was made, after the design of a MS Access data base for the 27 questions**
- 3.3. this analysis is presented to the UNGGIM Forum in Qatar, Feb 4 to 6, 2013**
- 3.4. the analysis needs to be verified, this process will be assisted by the ISPRS Working Group IV-2. A meeting has been scheduled for April 22-26 in Novosibirsk**
- 3.5. a final UNGGIM publication and presentation is planned for the Meeting of Experts in Cambridge in July 2013**

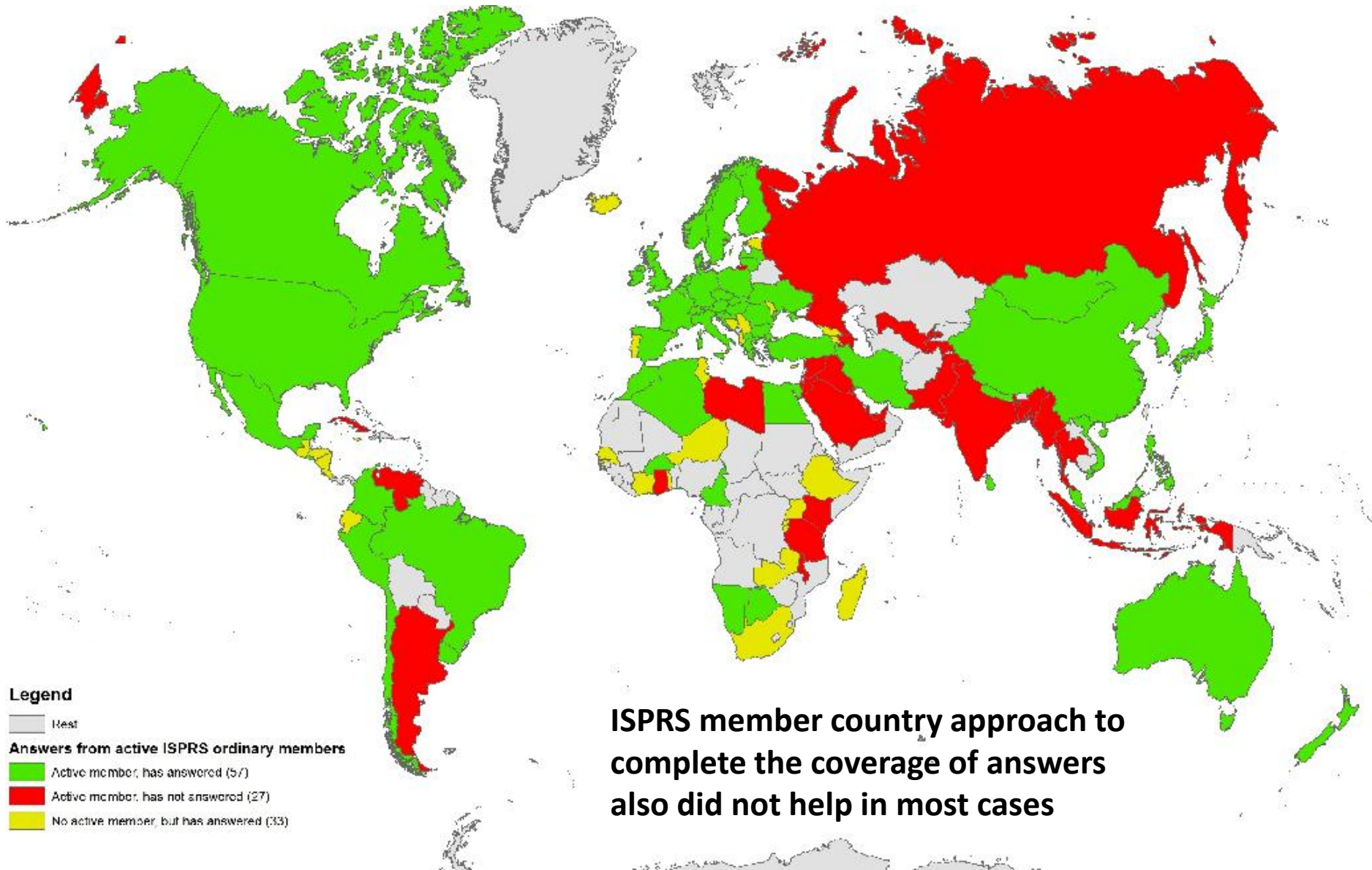
Returned Questionnaires from 90 Countries plus Northern Ireland out of 193 UN Member Countries



Europe complete
Americas o.k.
Africa mixed
Asia difficult

this is considered a success,
even though 100% completion for
answers for coverage and age of maps
is globally required

ISPRS Members not having answered in red



International Map or Geodata Vendors can help to fill in the Missing answers for questions 1 and 2



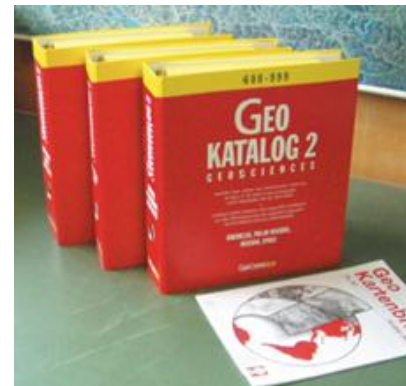
**East View Geospatial
Minneapolis, MN, USA**



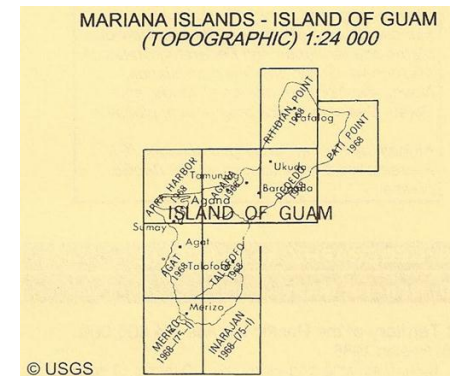
**Example:
Supply of North Korean Maps**



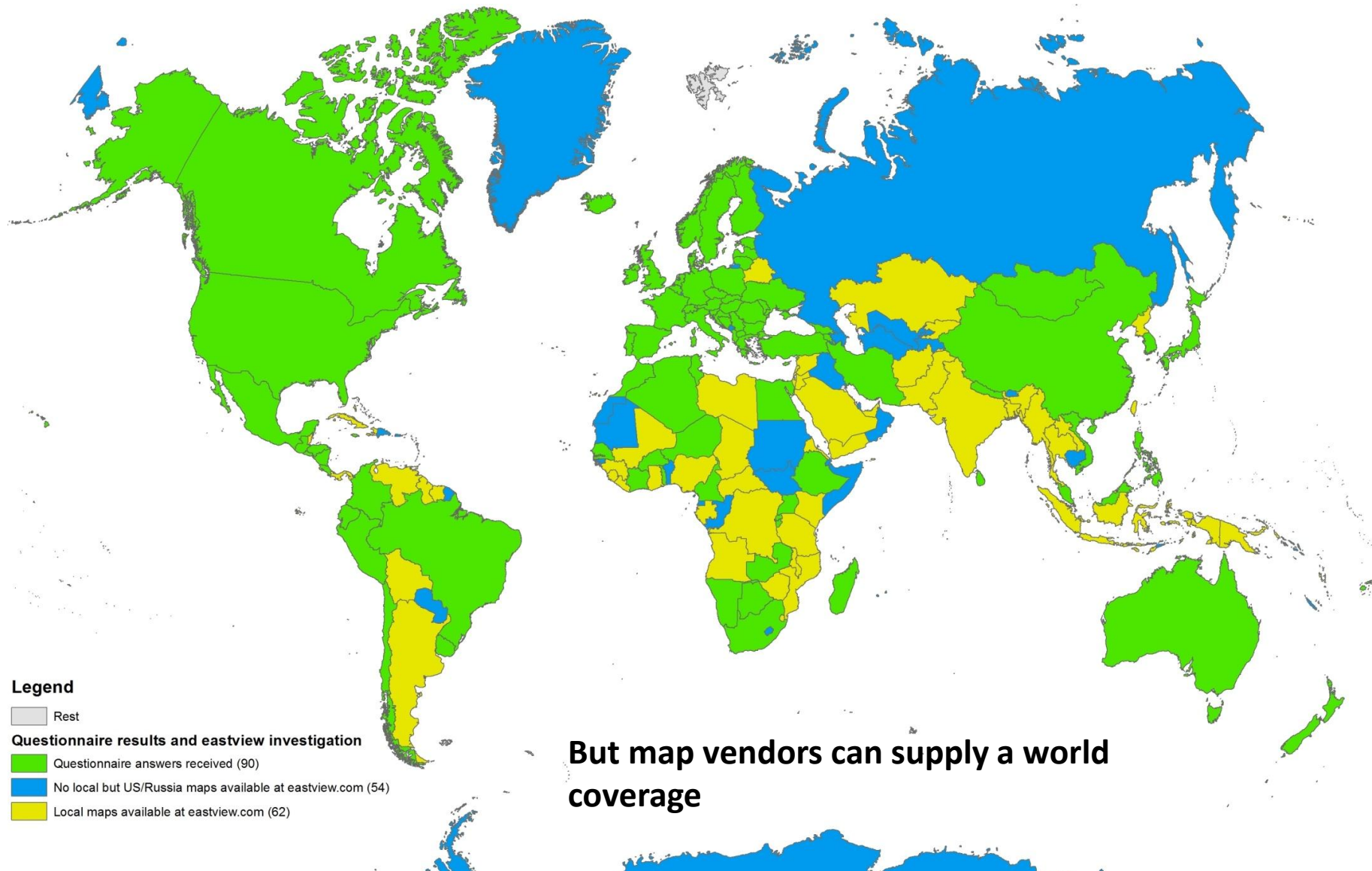
**Internationales Landkartenhaus
Stuttgart, Germany**



**Example:
Catalogue with map coverages of Guam**



Question 1: Map Coverage from Questionnaire in green
civilian maps from vendors in yellow
military maps from vendors in blue



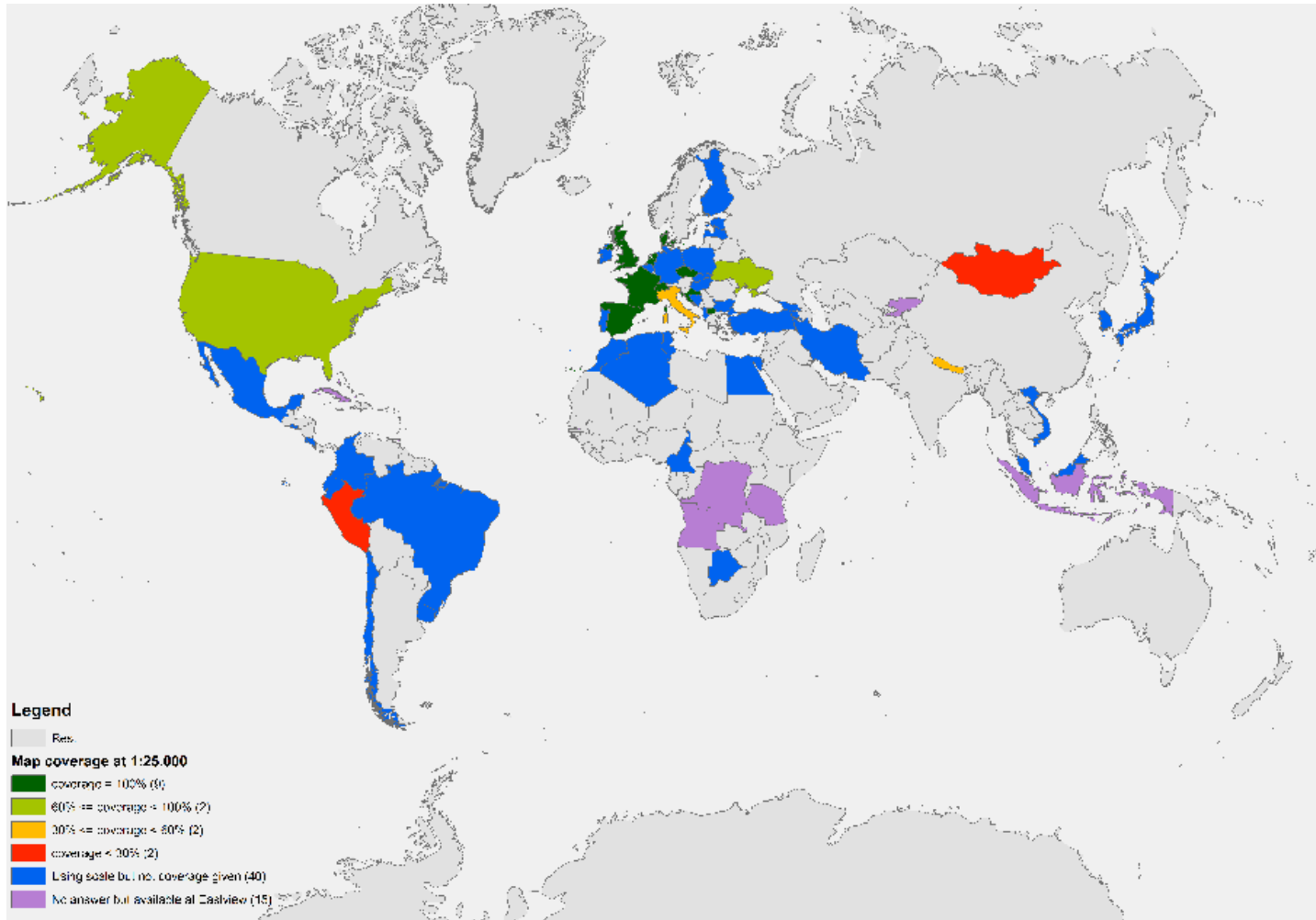
Legend

- Rest
- Questionnaire results and eastview investigation
- Questionnaire answers received (90)
- No local but US/Russia maps available at eastview.com (54)
- Local maps available at eastview.com (62)

But map vendors can supply a world coverage

Scale Levels: Percentage of Area Coverage **1:25 000**

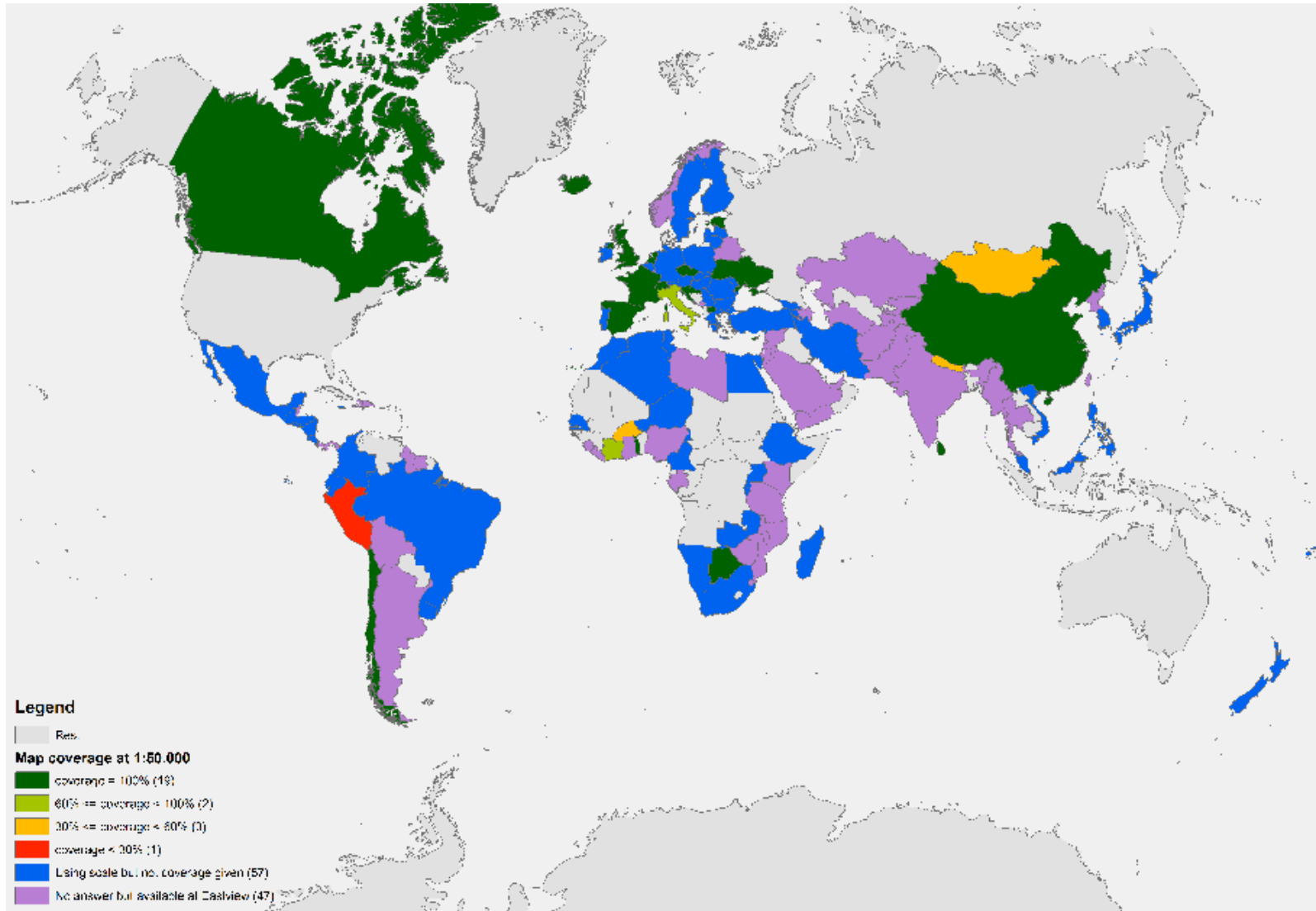
green = 100%, orange = 30%, red < 30%, blue = %not stated, from questionnaire
violet = available by vendors



coverage verification required, e.g. Alaska (USA)

Scale Levels: Percentage of Area Coverage **1:50 000**

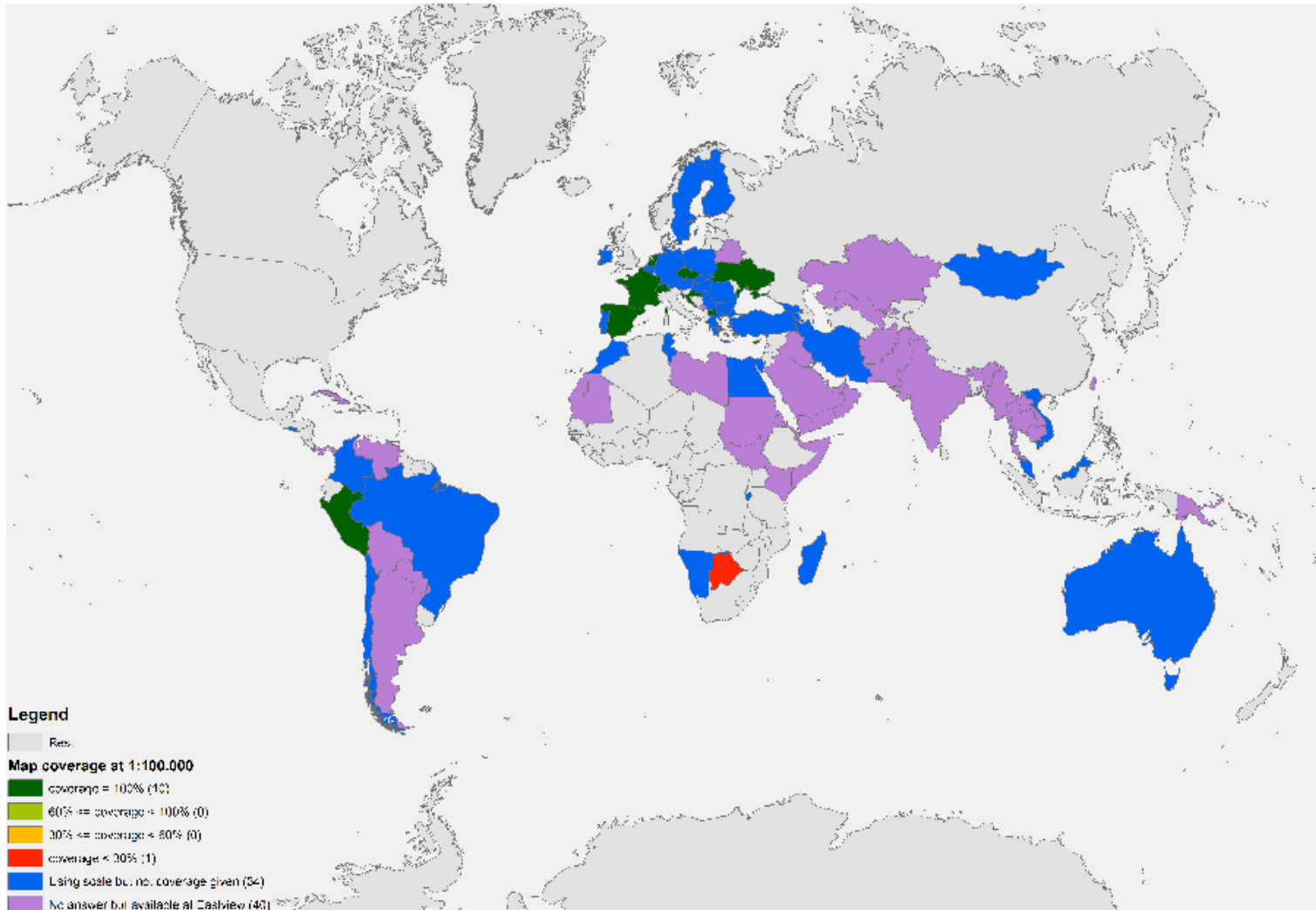
green = 100%, orange = 30%, red < 30%, blue = %not stated, from questionnaire
violet = available by vendors



coverage verification required

Scale Levels: Percentage of Area Coverage **1: 100 000**

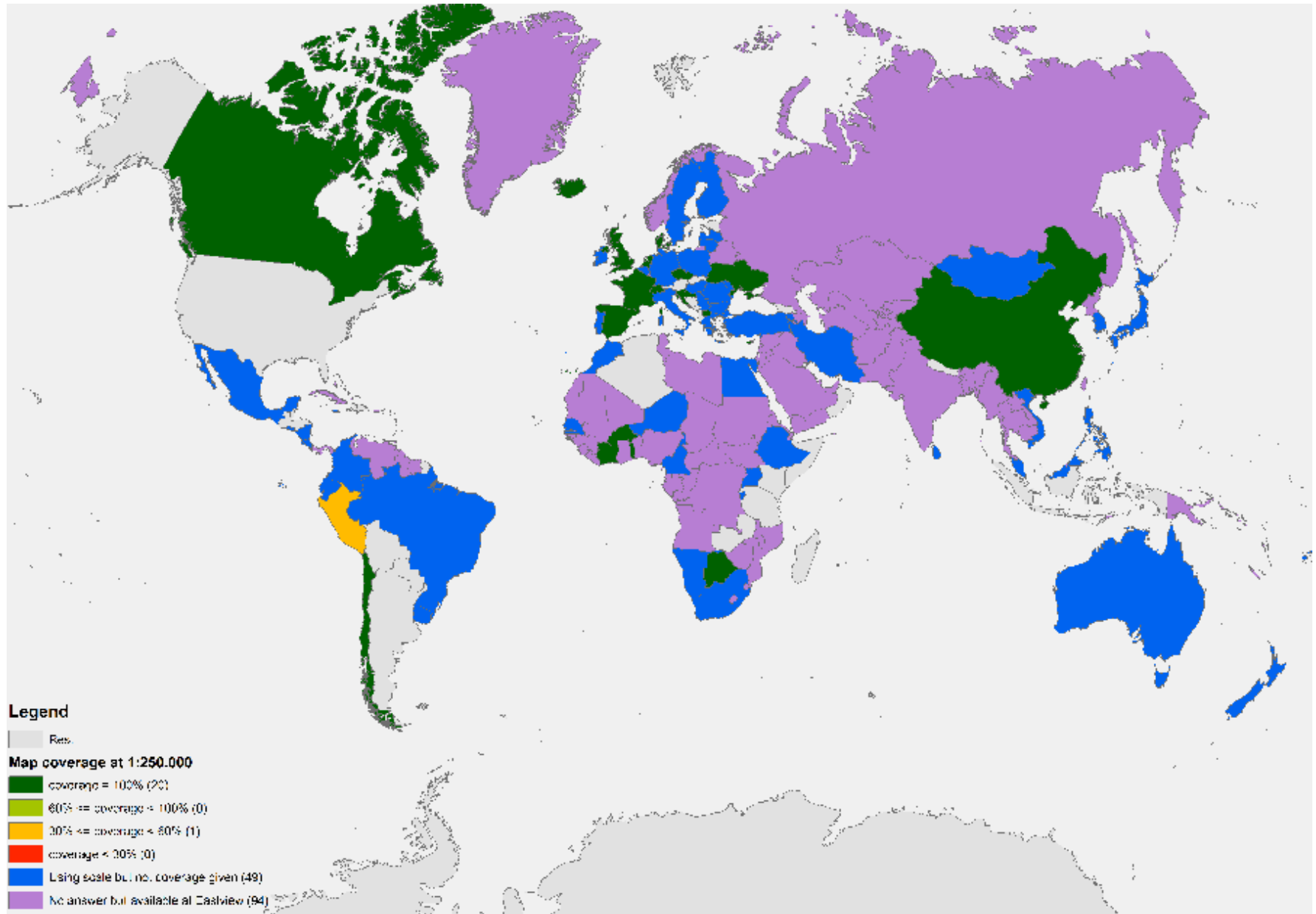
green = 100%, orange = 30%, red < 30%, blue = %not stated, from questionnaire
violet = available by vendors



coverage verification required

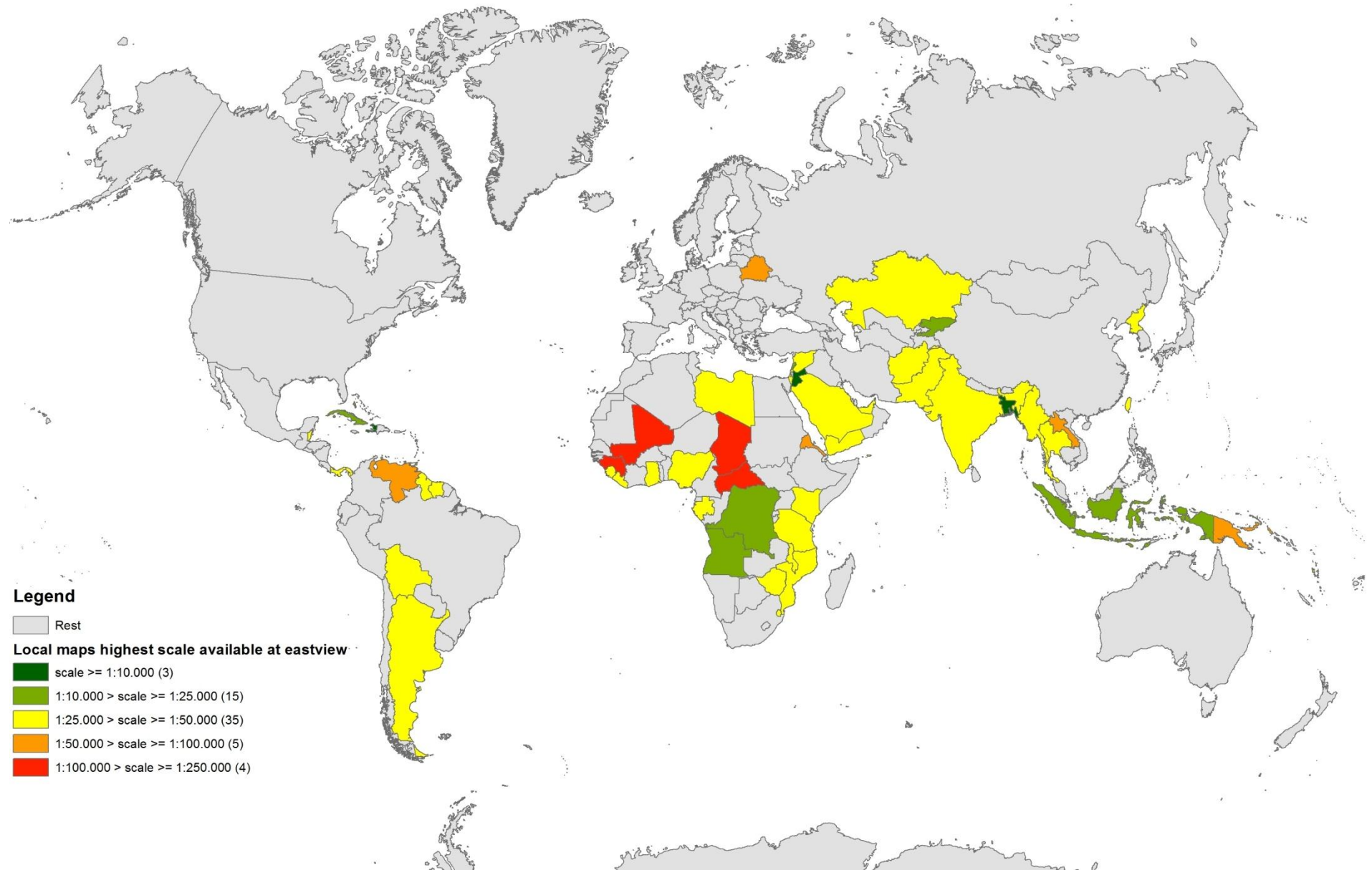
Percentage of Area Coverage from Questionnaire 1: 250 000

green = 100%, orange = 30%, blue = %not stated, violet = available by vendors



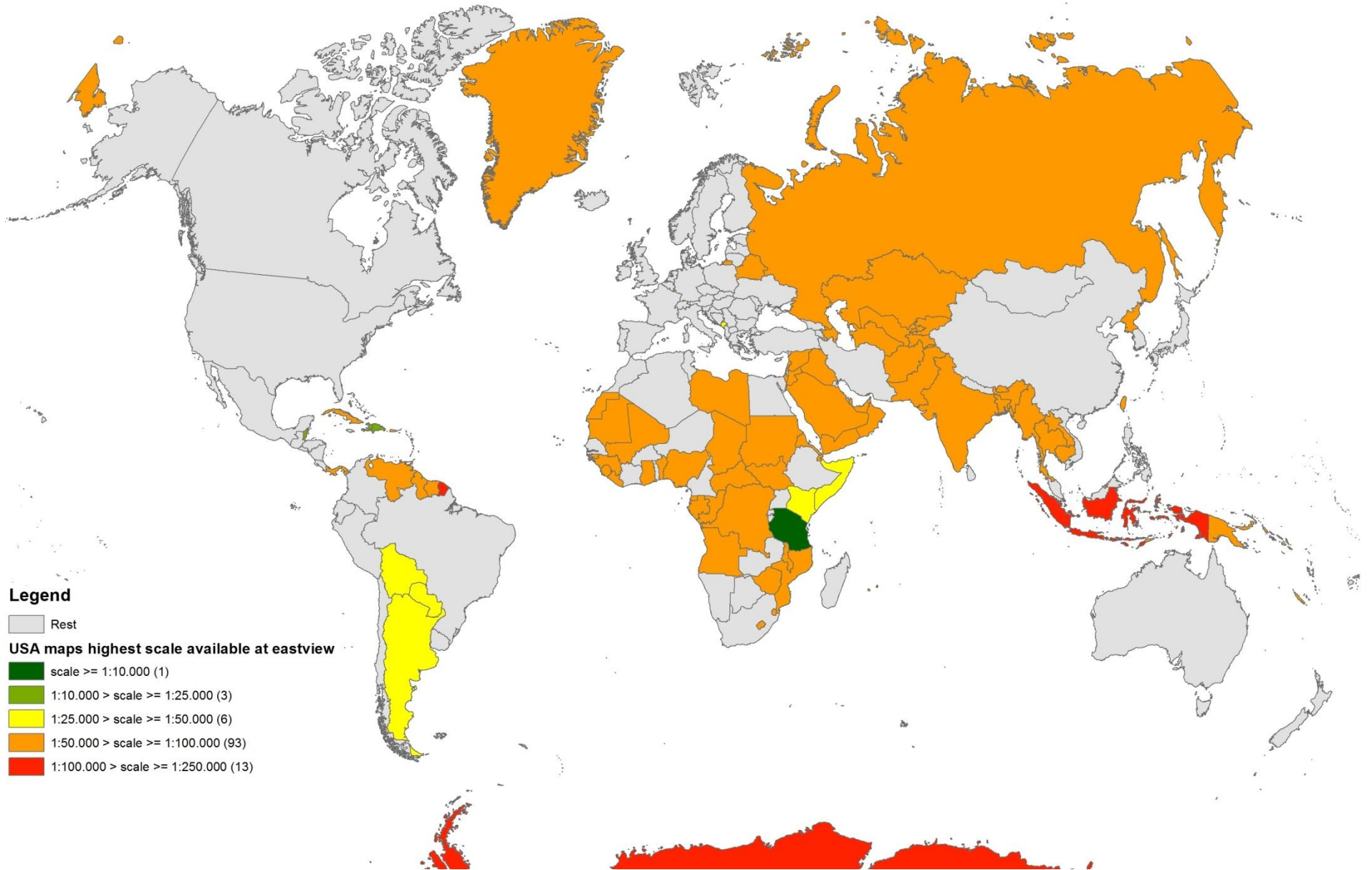
Scales of **Nationally** Produced Maps from Vendors

dark green 1:10 000, light green 1:25 000, yellow 1:50 000, brown 1:100 000,
red 1:250 000



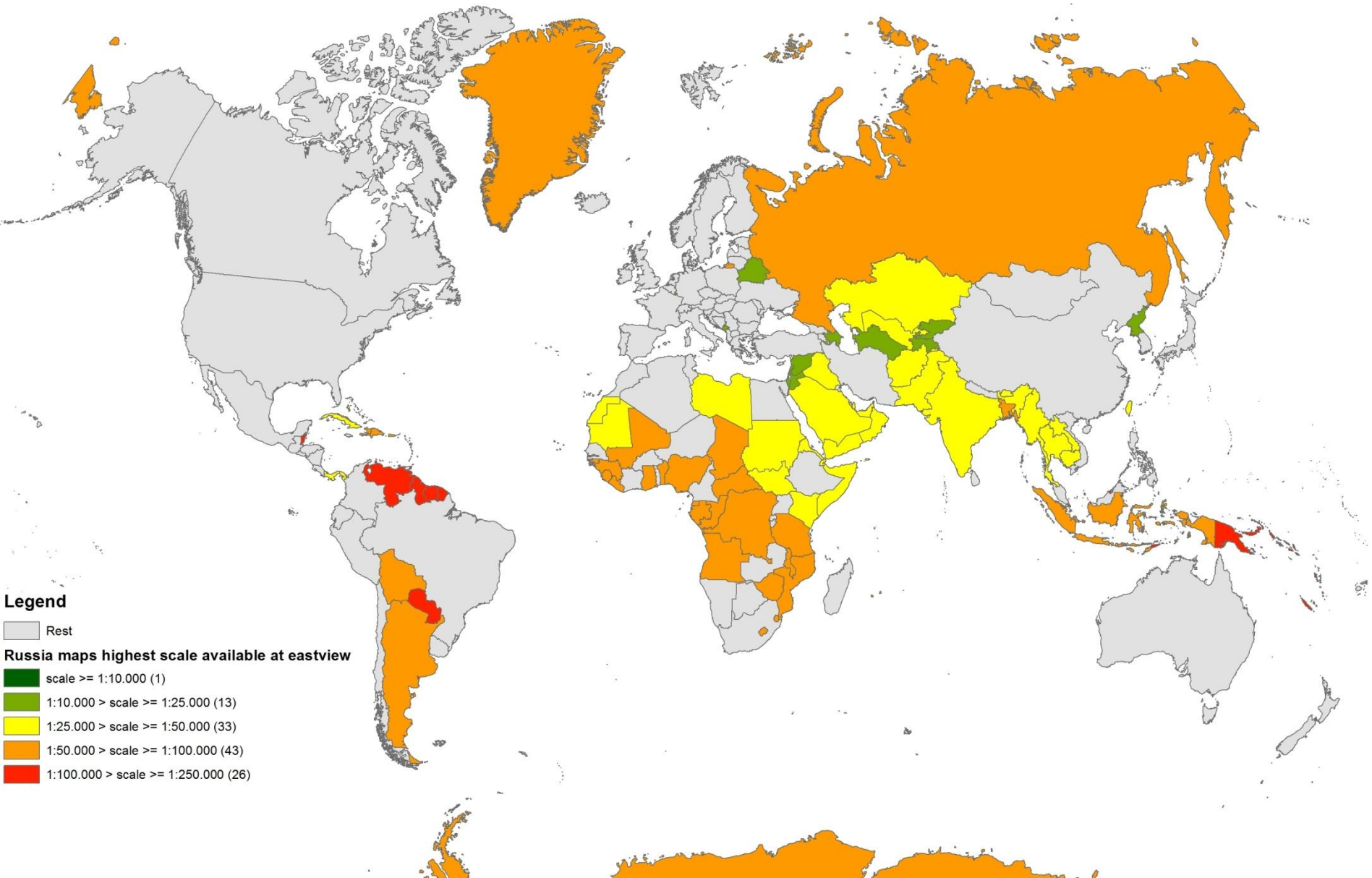
Scales of **US produced Military** Maps from Vendors

green 1:10 000, yellow 1:50 000, brown 1:100 000, red 1:250 000



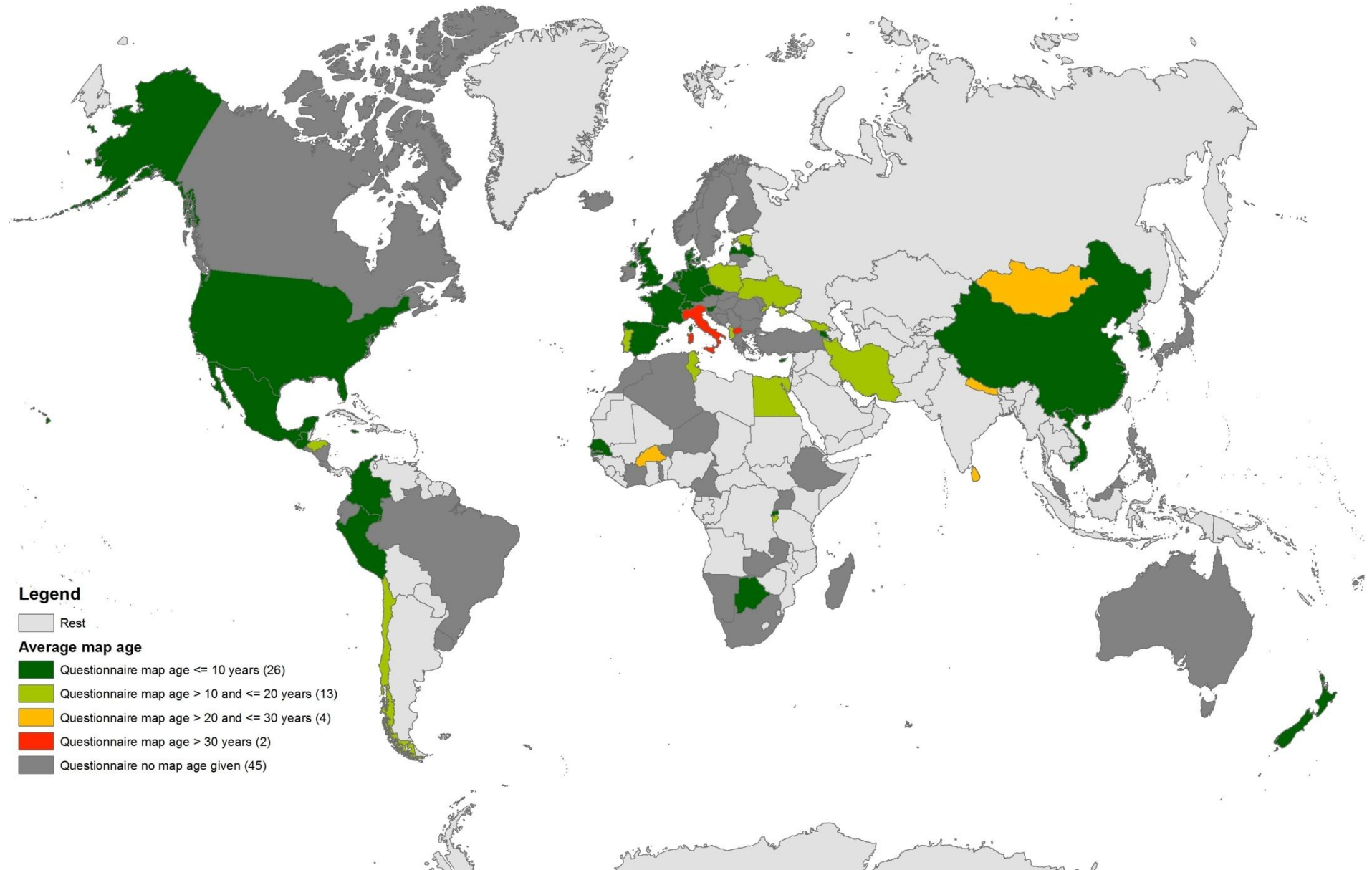
Scales of Russian Produced Military Maps from Vendors

green 1:25 000, yellow 1:50 000, brown 1:100 000, red 1:250 000



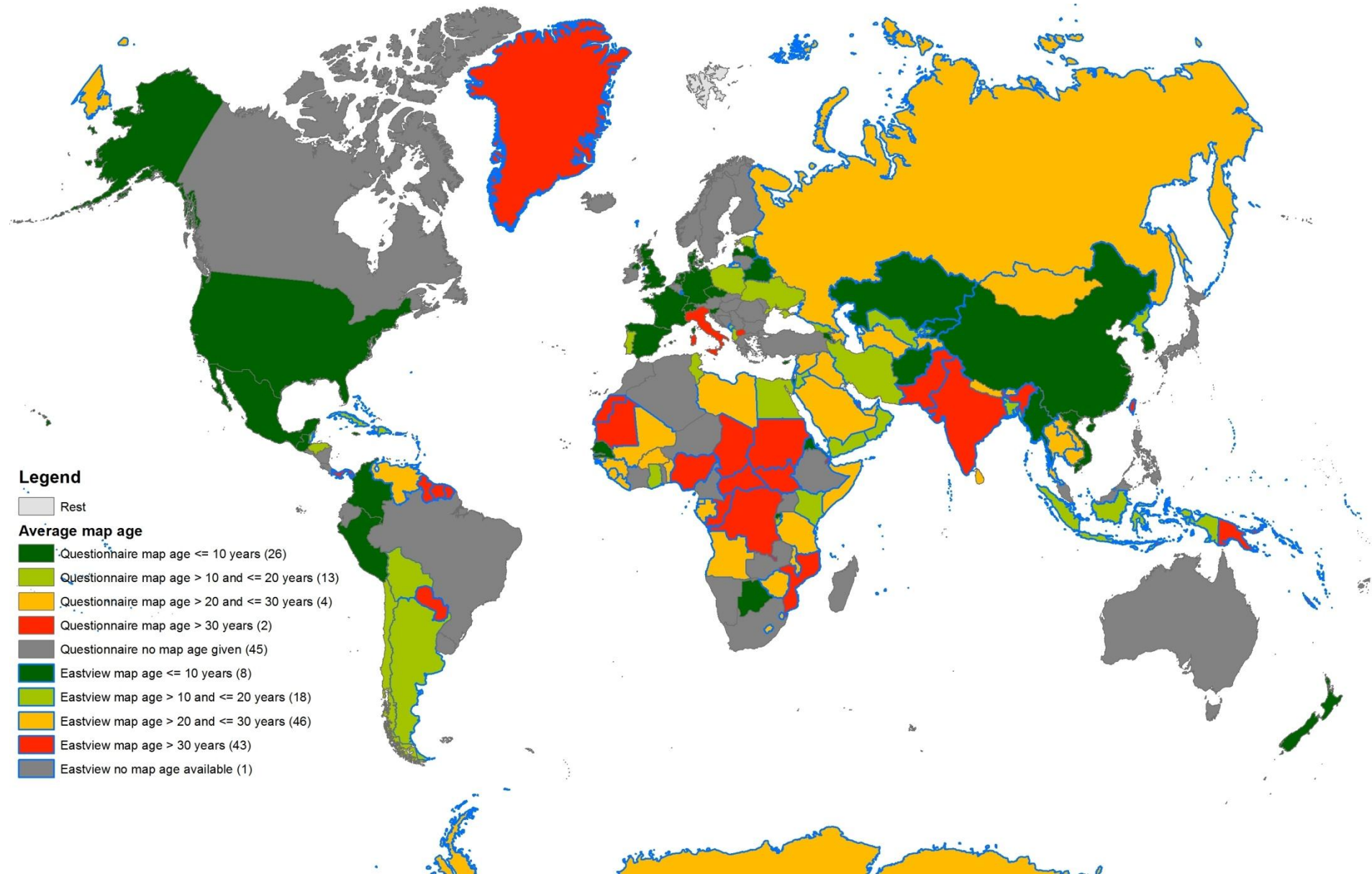
Question 2: Age of Maps from Questionnaires

dark green < 10 years, light green < 20 years, yellow < 30 years, red > 30 years, grey age not stated



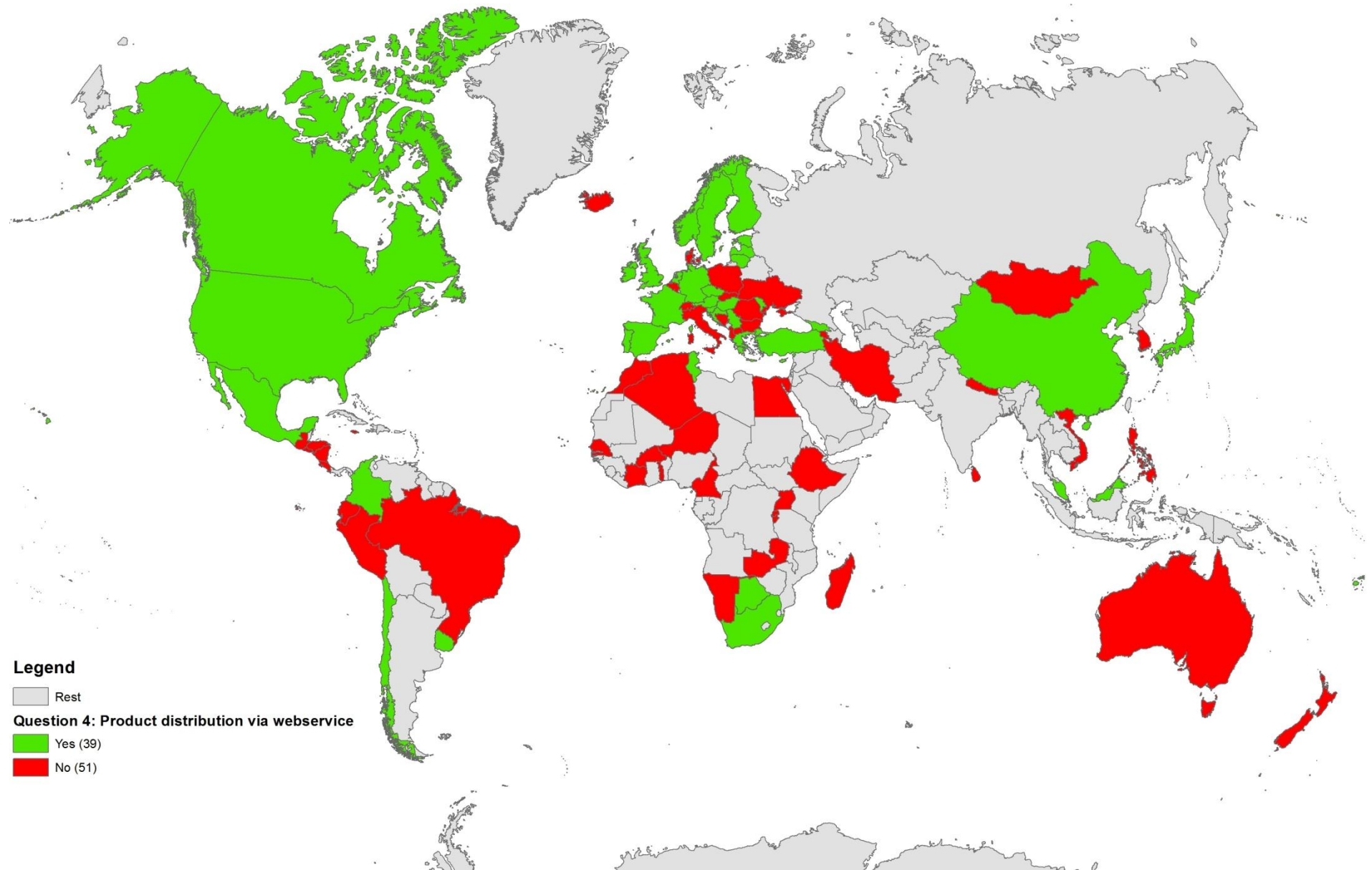
Question 2: Map **age combined** from Questionnaires and from Vendors

dark green <10 yrs, light green < 20yrs, orange < 30yrs, red > 30yrs, grey age not given



Question 4 : Web distribution of maps

green = yes ; red = no



Legend

Rest

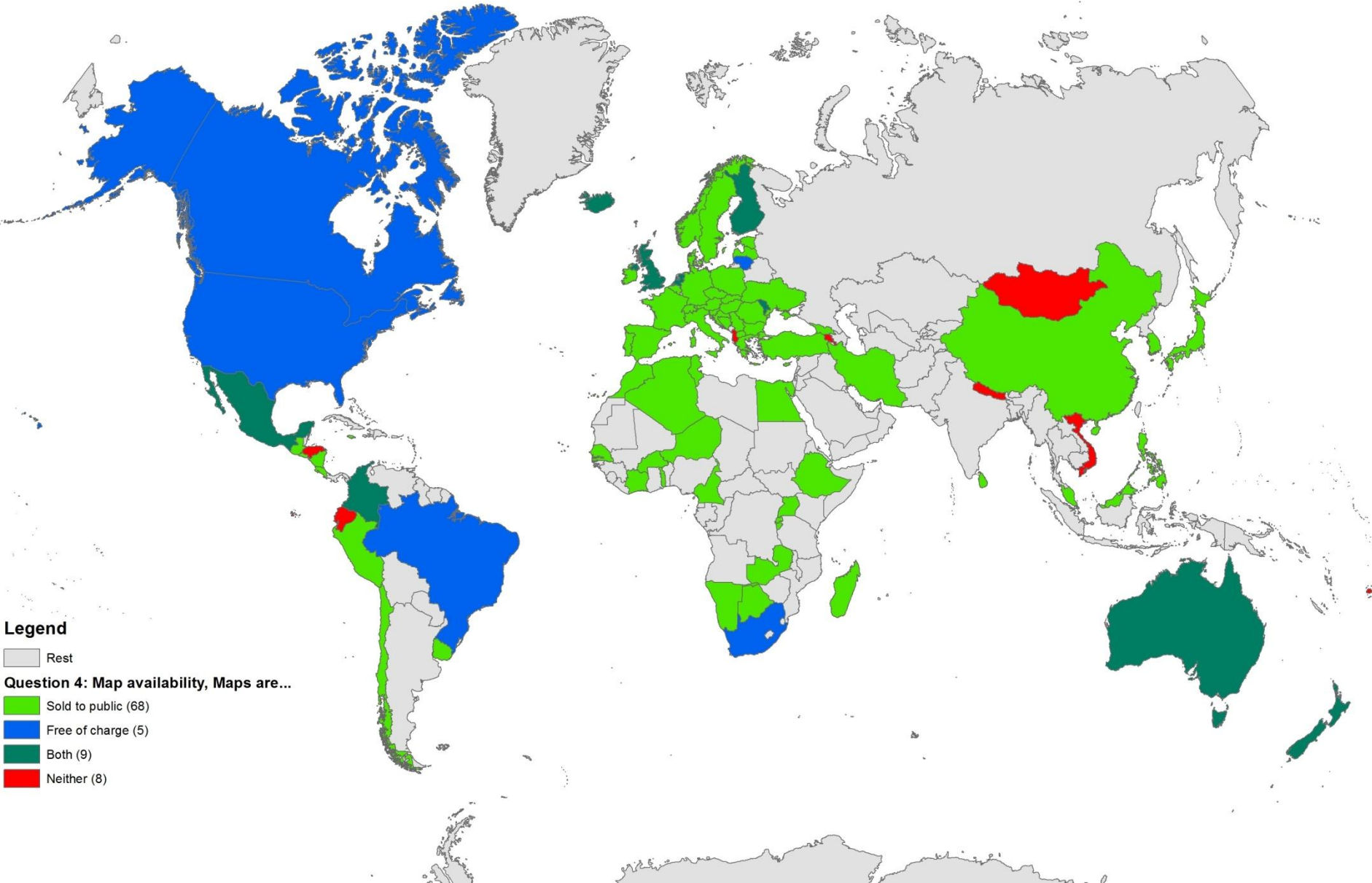
Question 4: Product distribution via webservice

Yes (39)

No (51)

Question 4: Map Availability

blue = free of charge ; green = for sale



Legend

Rest

Question 4: Map availability, Maps are...

Sold to public (68)

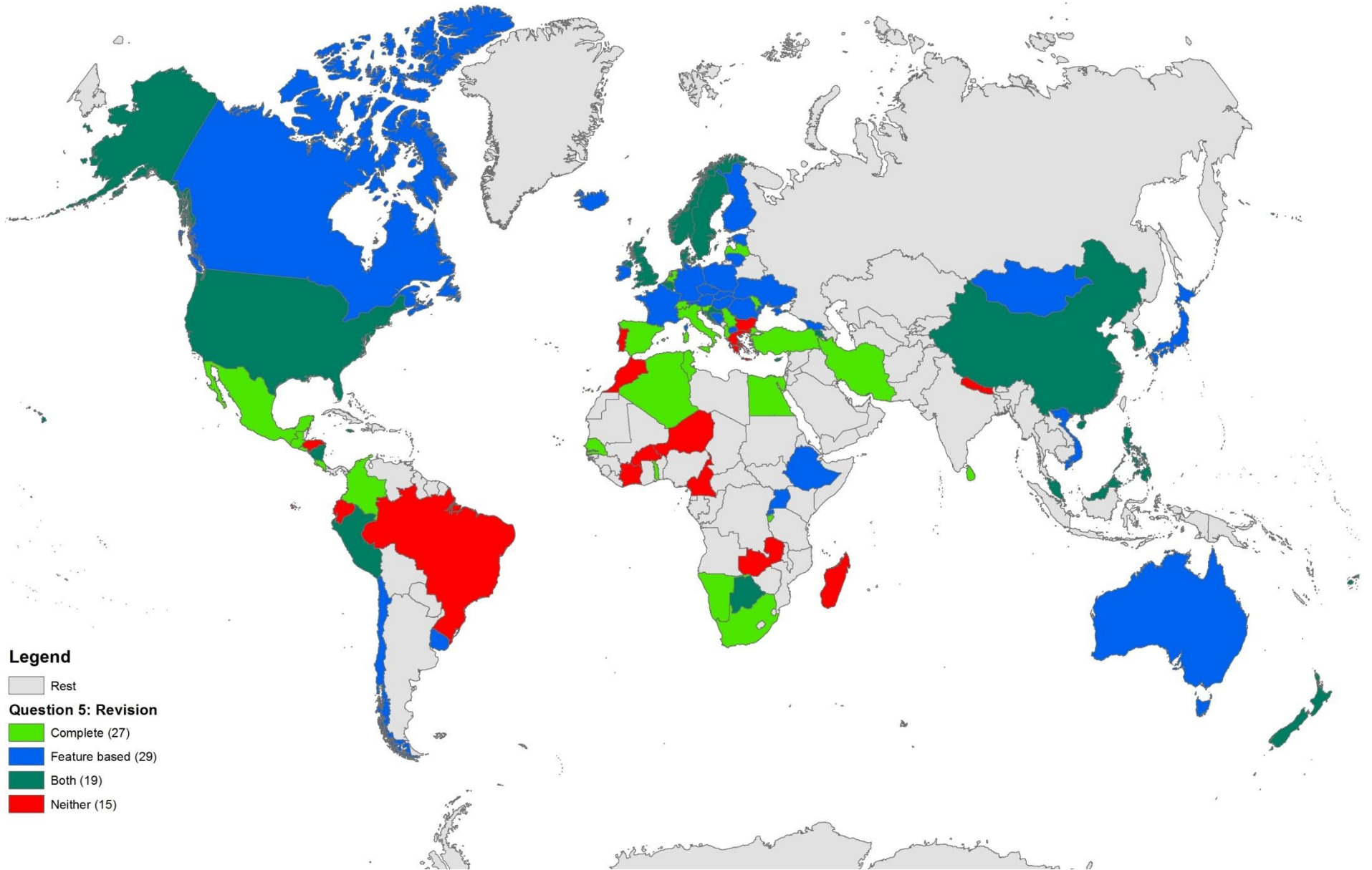
Free of charge (5)

Both (9)

Neither (8)

Question 5 : Map Revision

green = revision by mapsheets, blue = revision by features, red = no revision

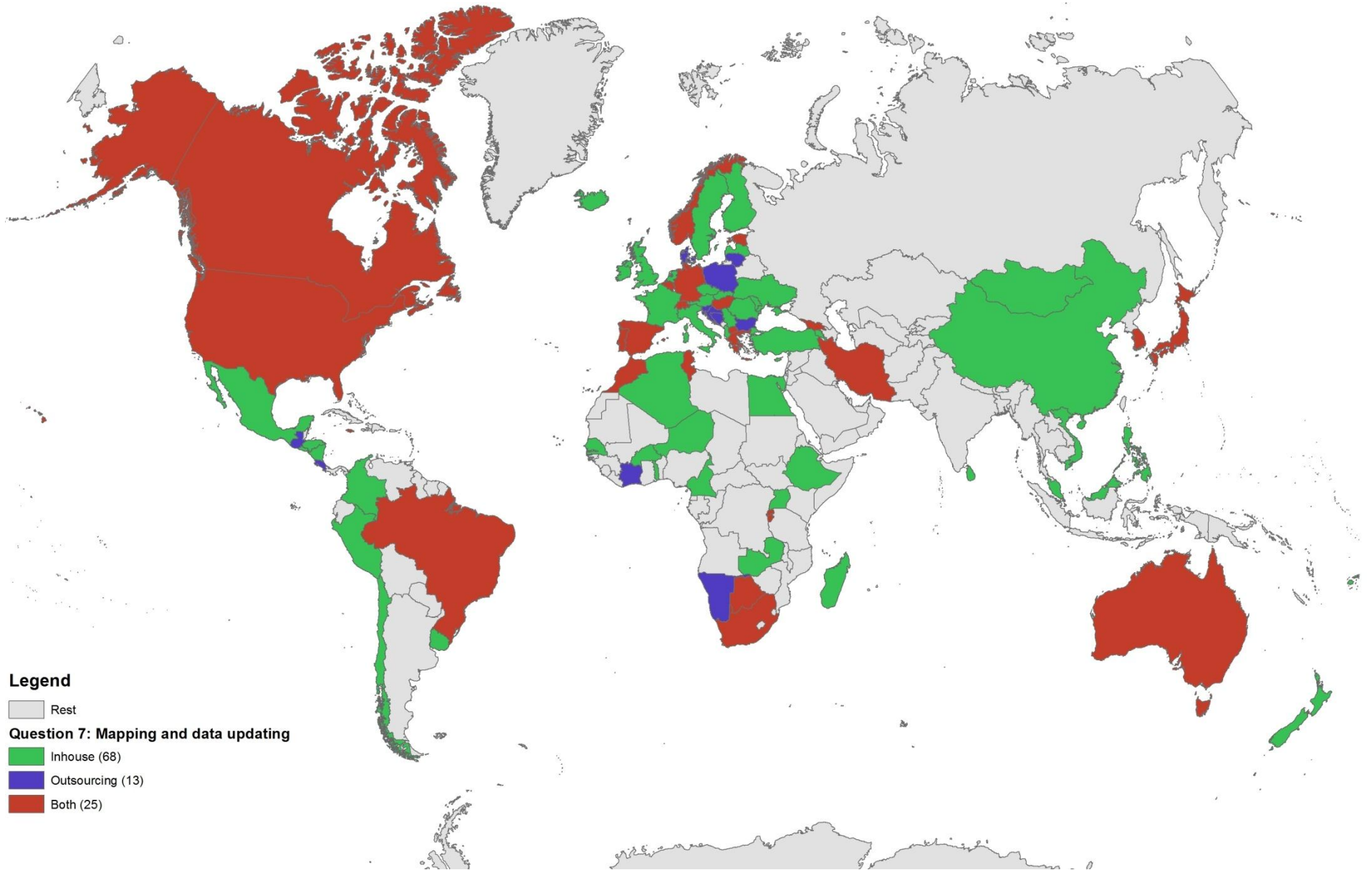


Legend

- Rest
- Question 5: Revision**
- Complete (27)
- Feature based (29)
- Both (19)
- Neither (15)

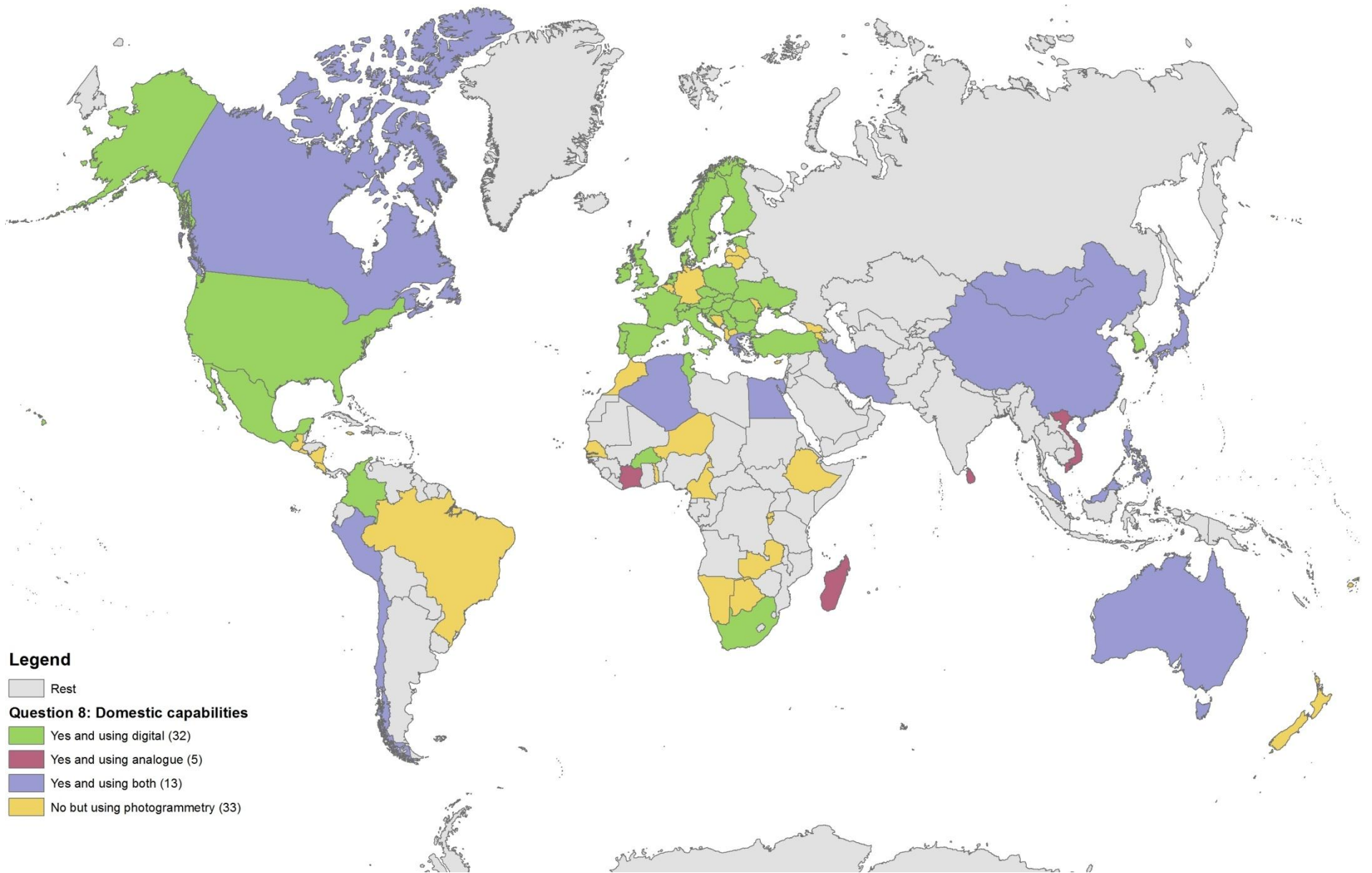
Question 7 : Inhouse or Outsourcing

green = inhouse, blue = outsourcing, brown = both



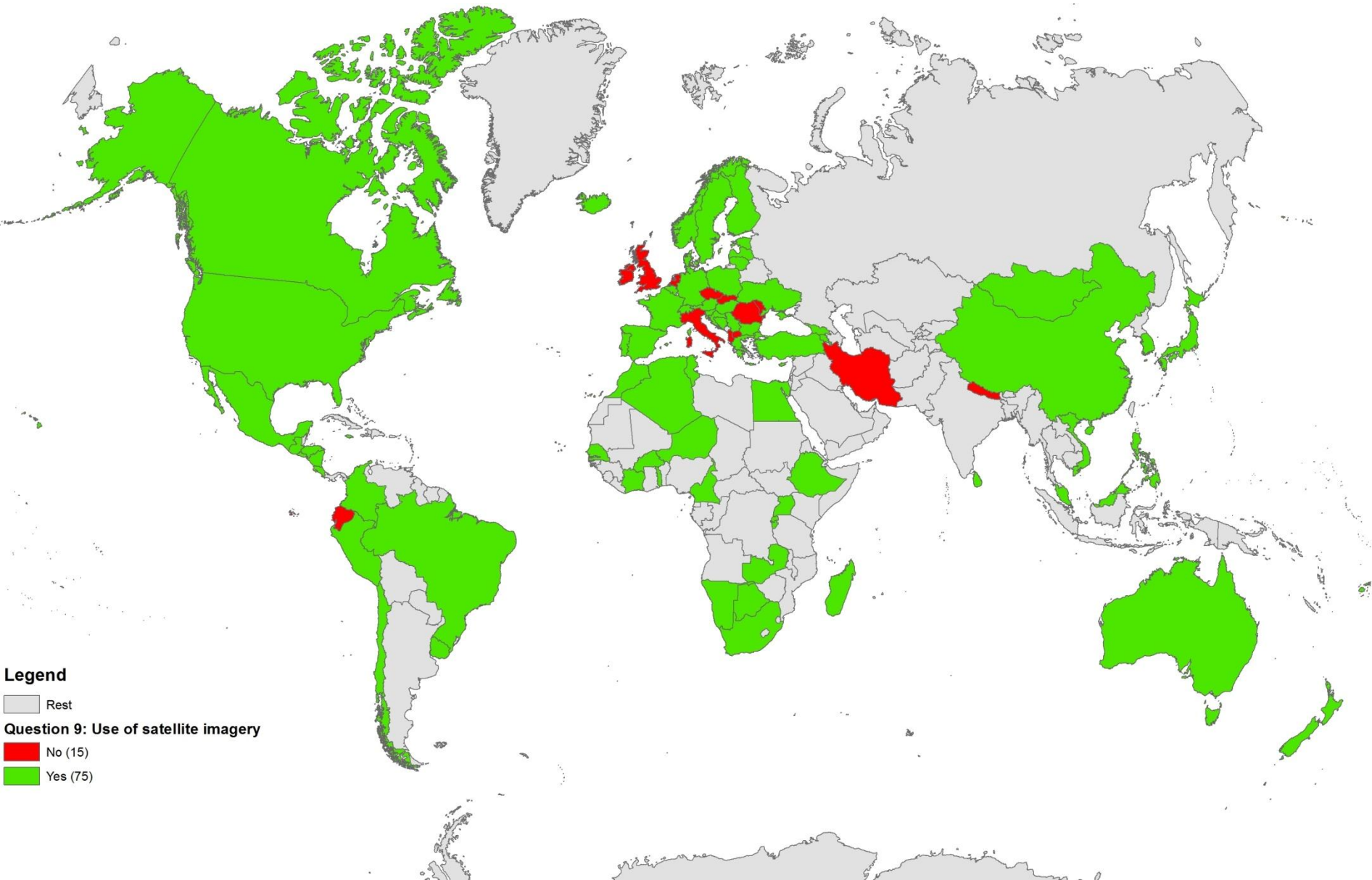
Question 8 : NMA in-house photogrammetric capability

green = digital, violet = analog, blue = both , yellow, no photogrammetric capability



Question 9 : Use of Satellite Imagery for Mapping

green = yes, red = no



Legend

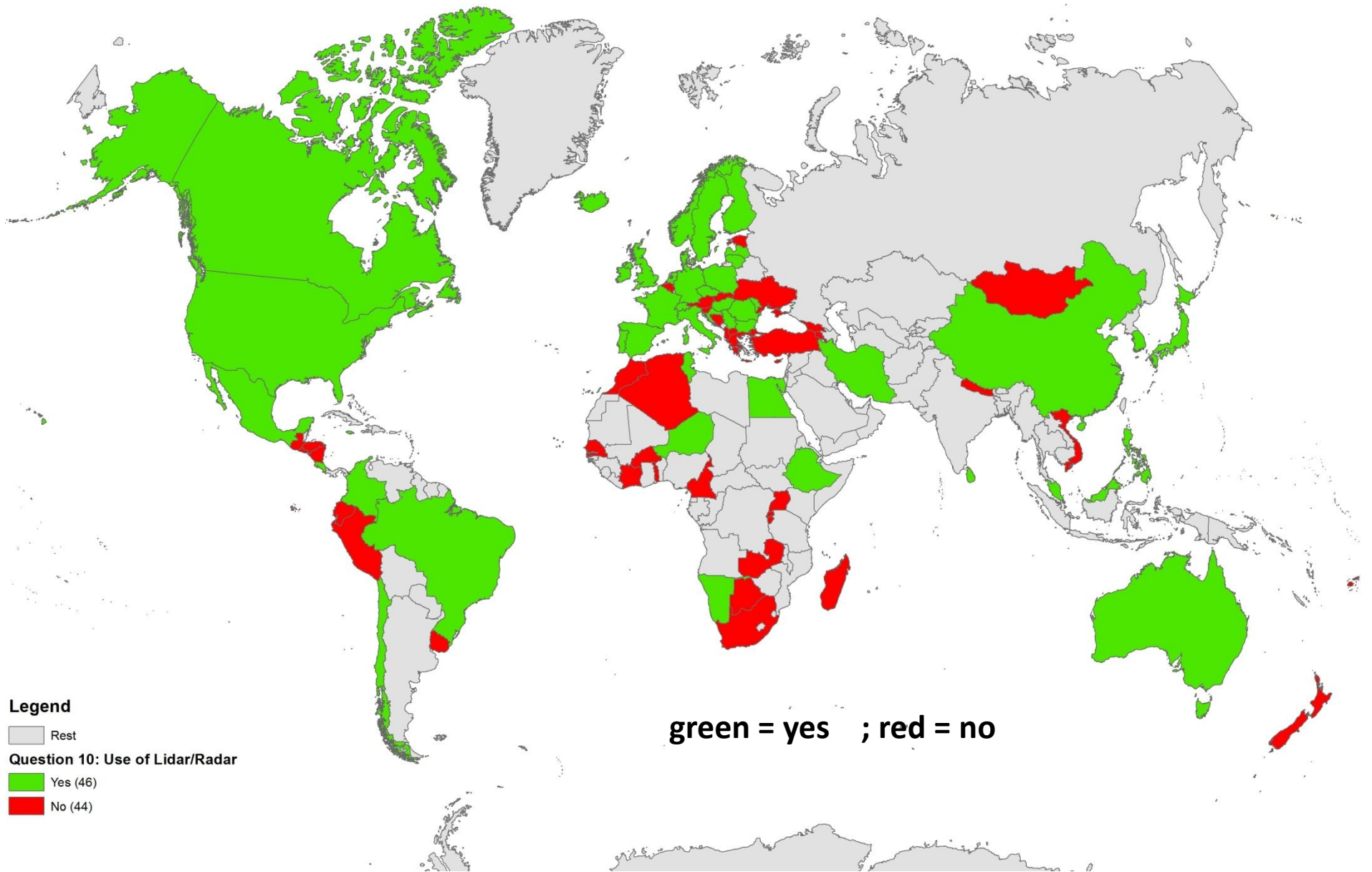
Rest

Question 9: Use of satellite imagery

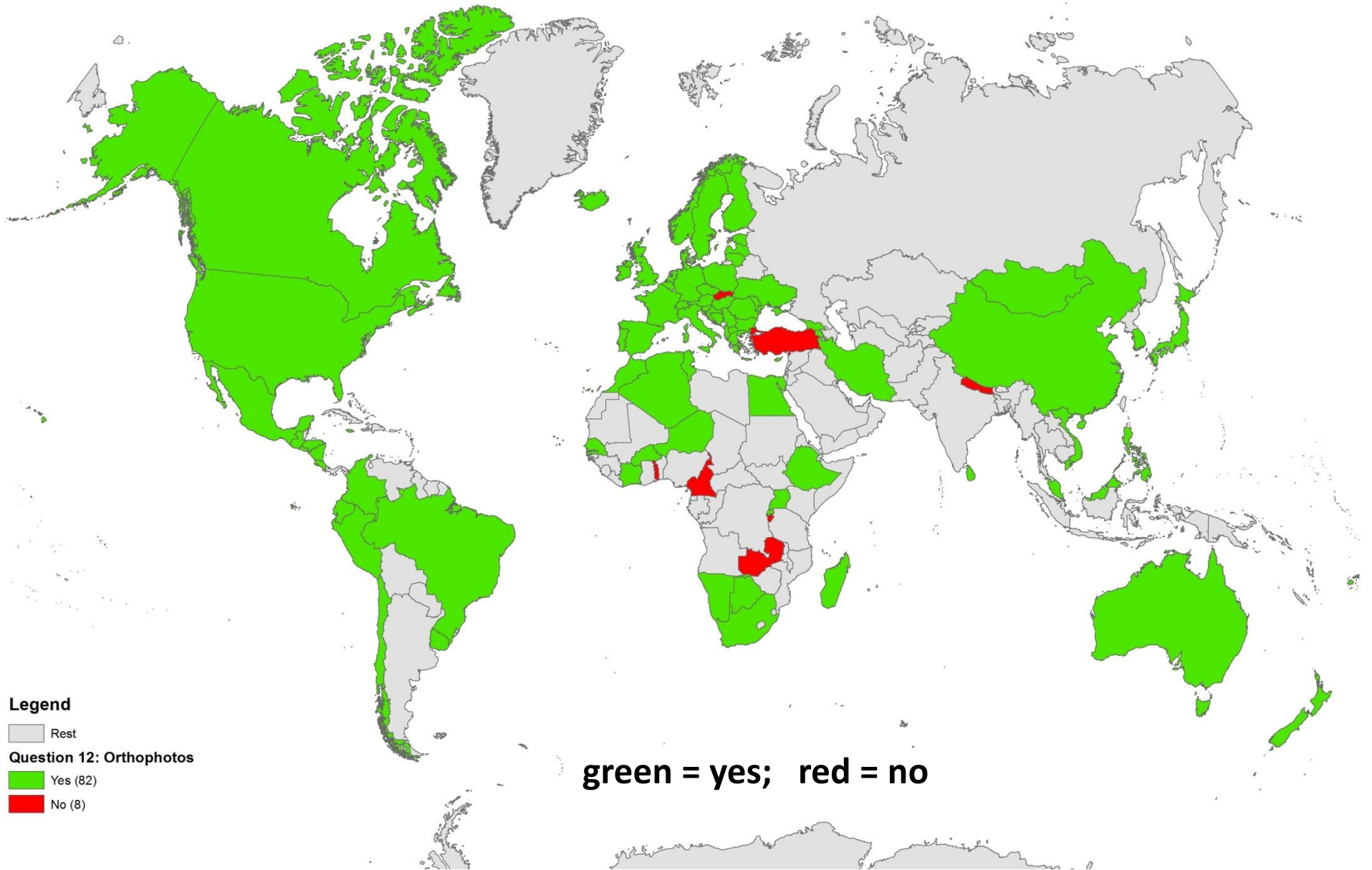
No (15)

Yes (75)

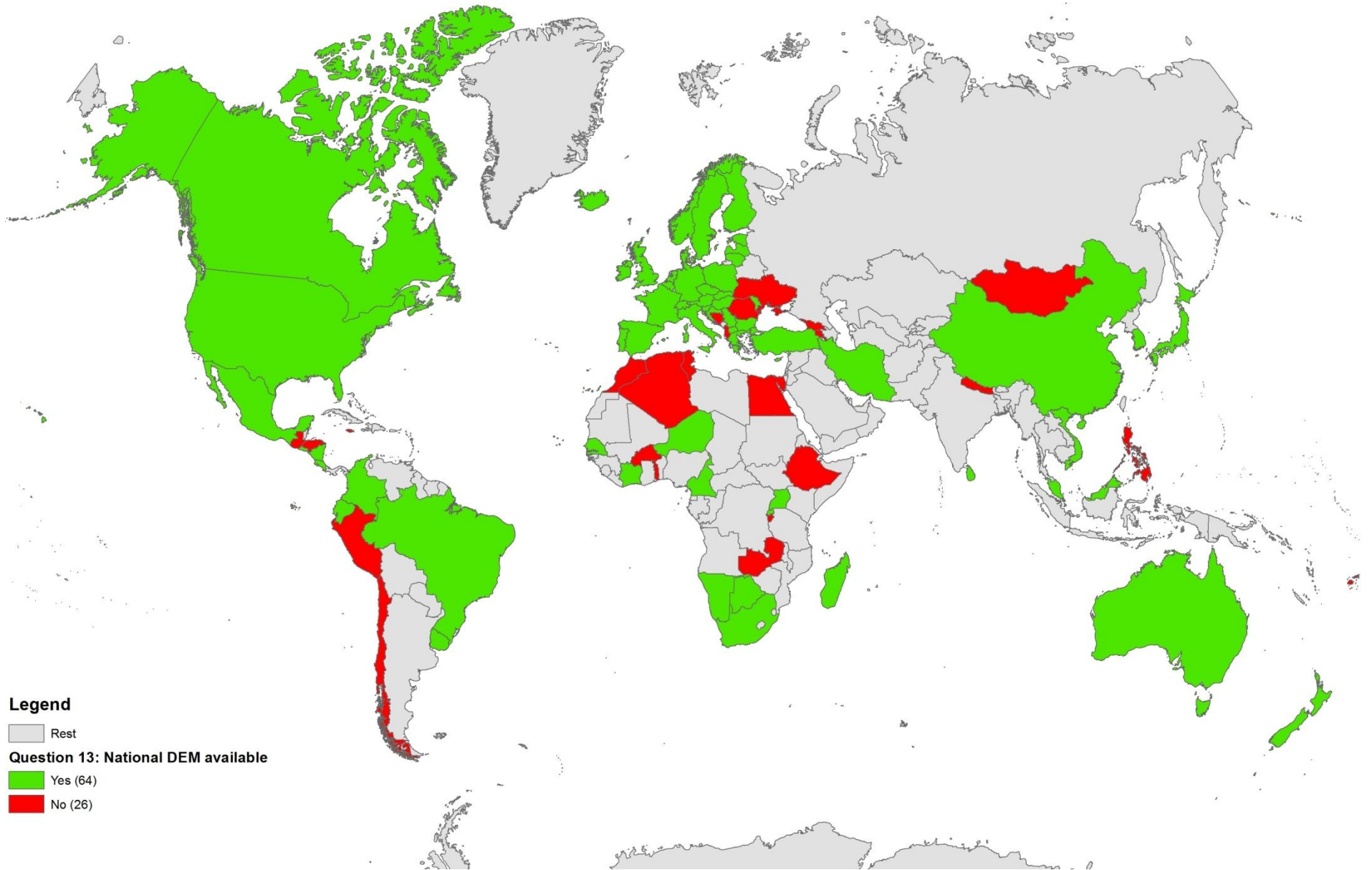
Question 10 : Use of Lidar or Radar



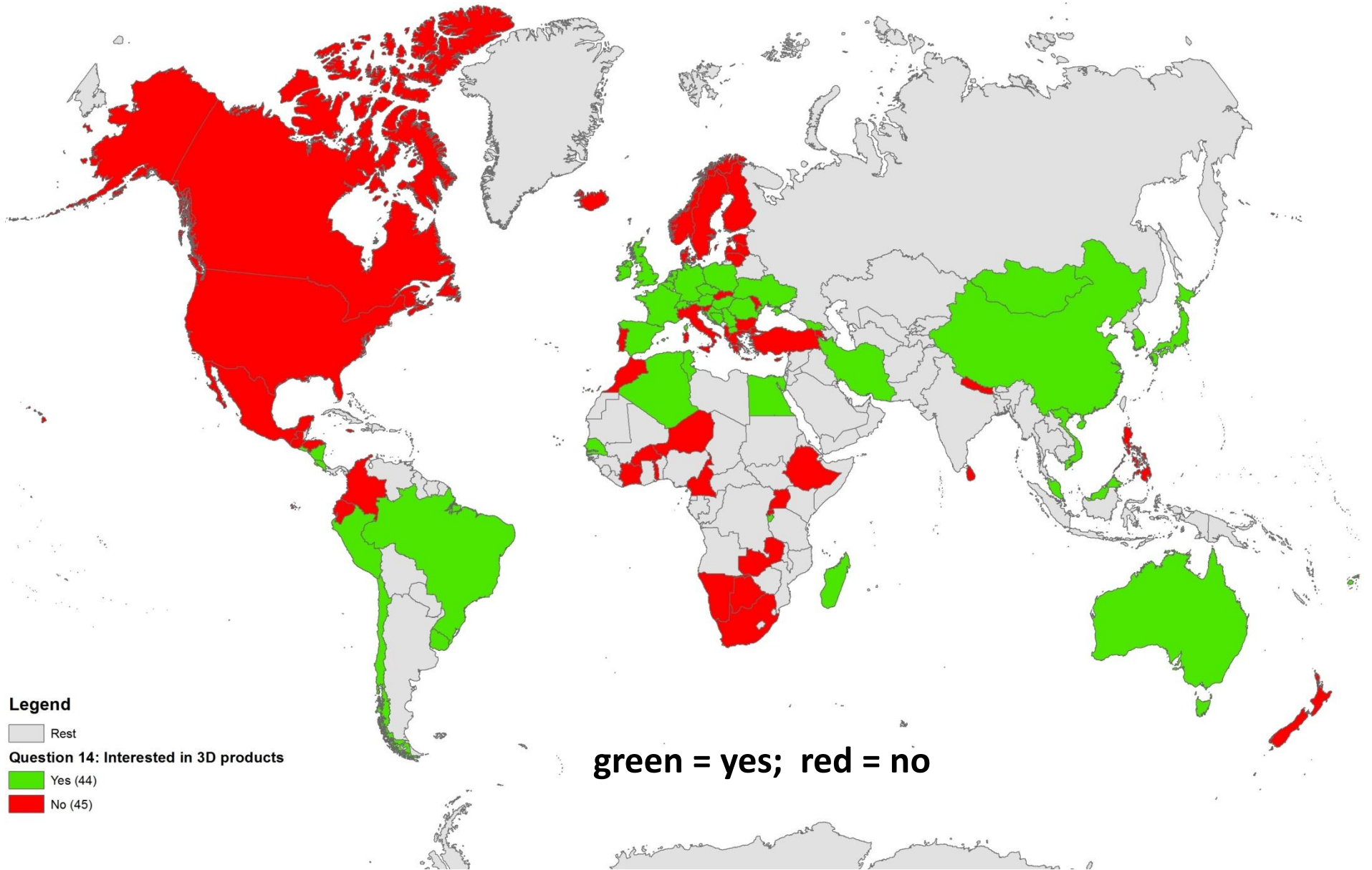
Question 12 : Orthophotos used in national mapping



Question 13 : Existence of National Digital Elevation Model

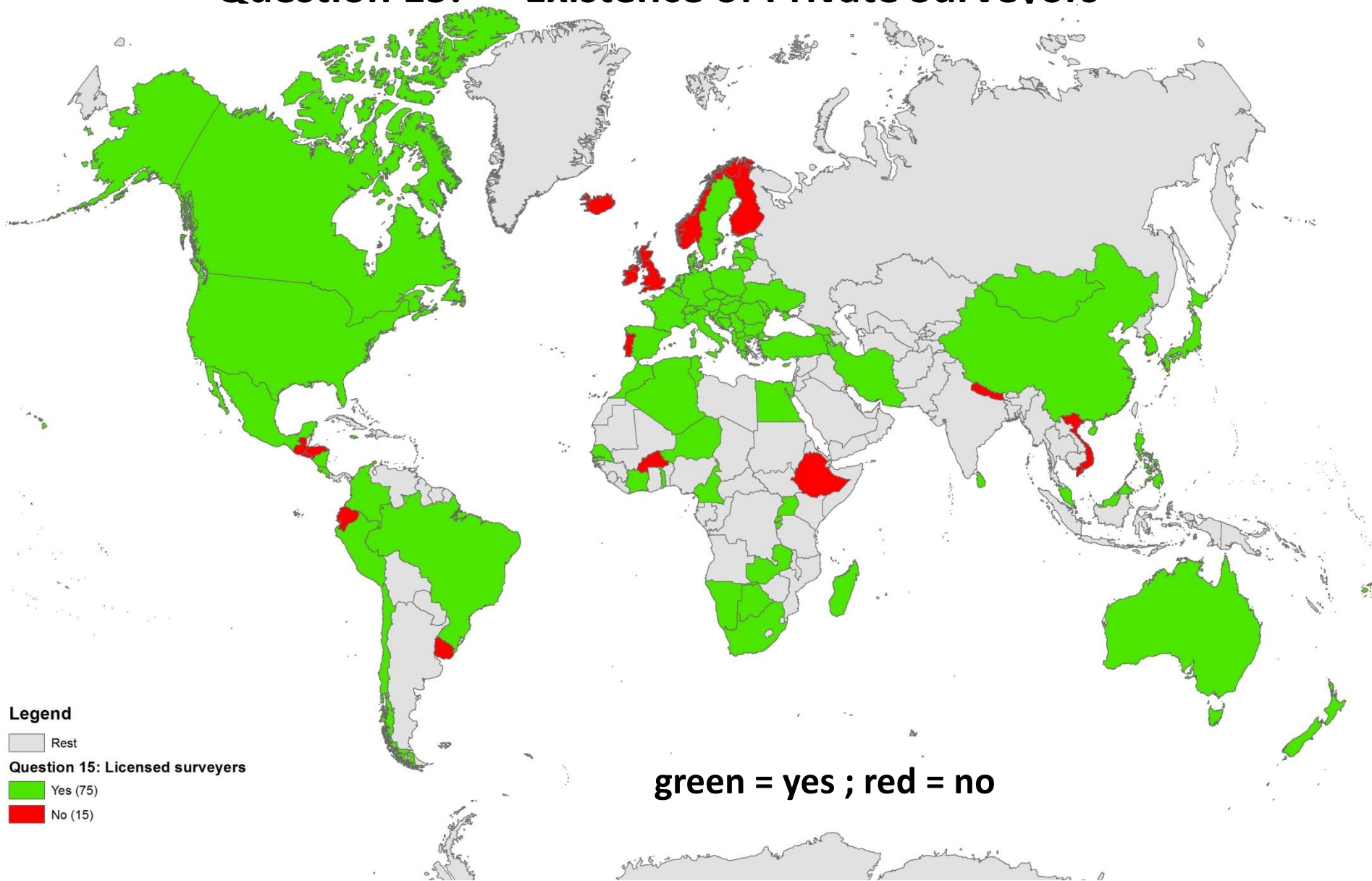


Question 14: NMA Interest in 3D Products

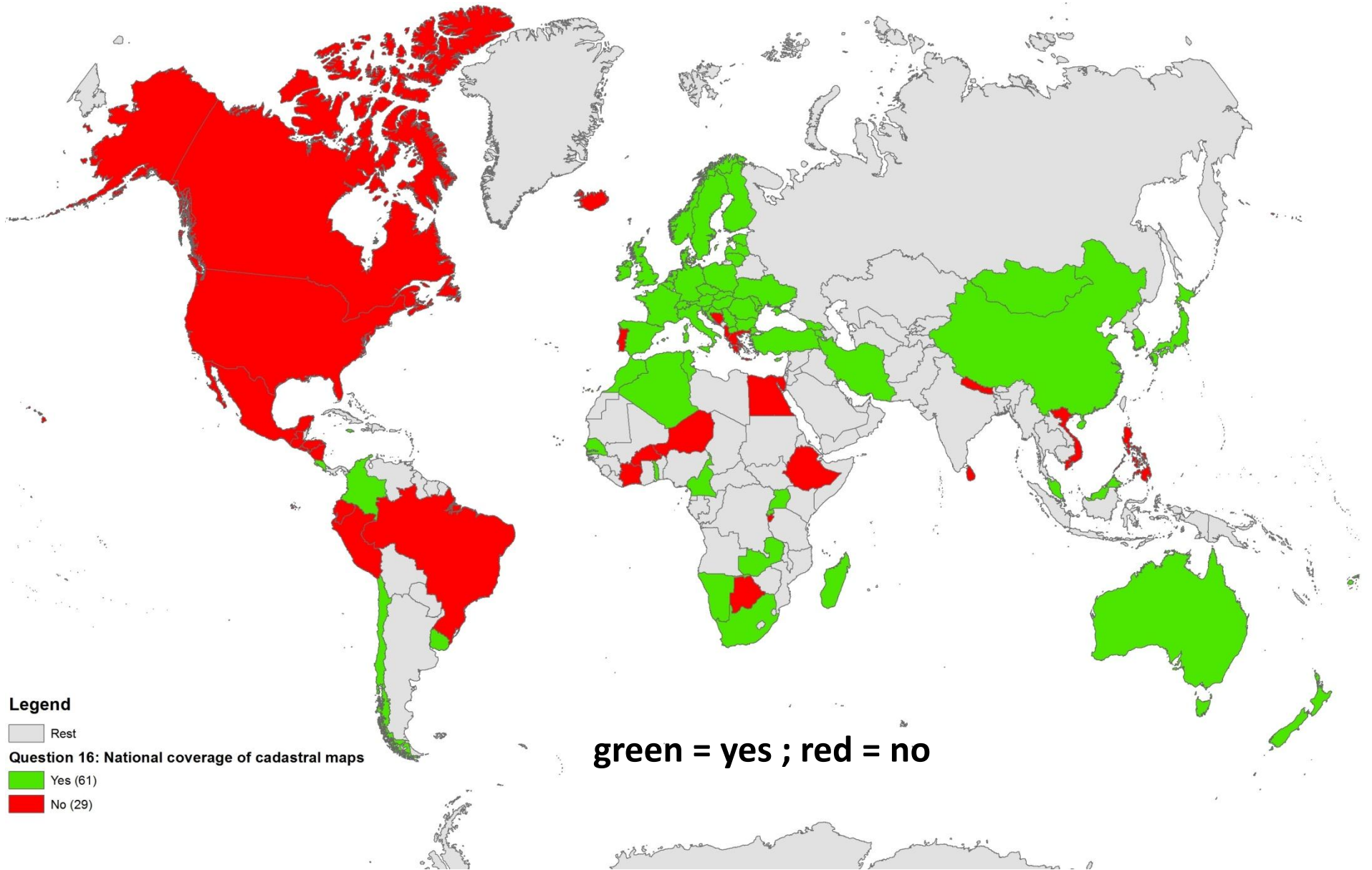


Cadastral and Land Registration:

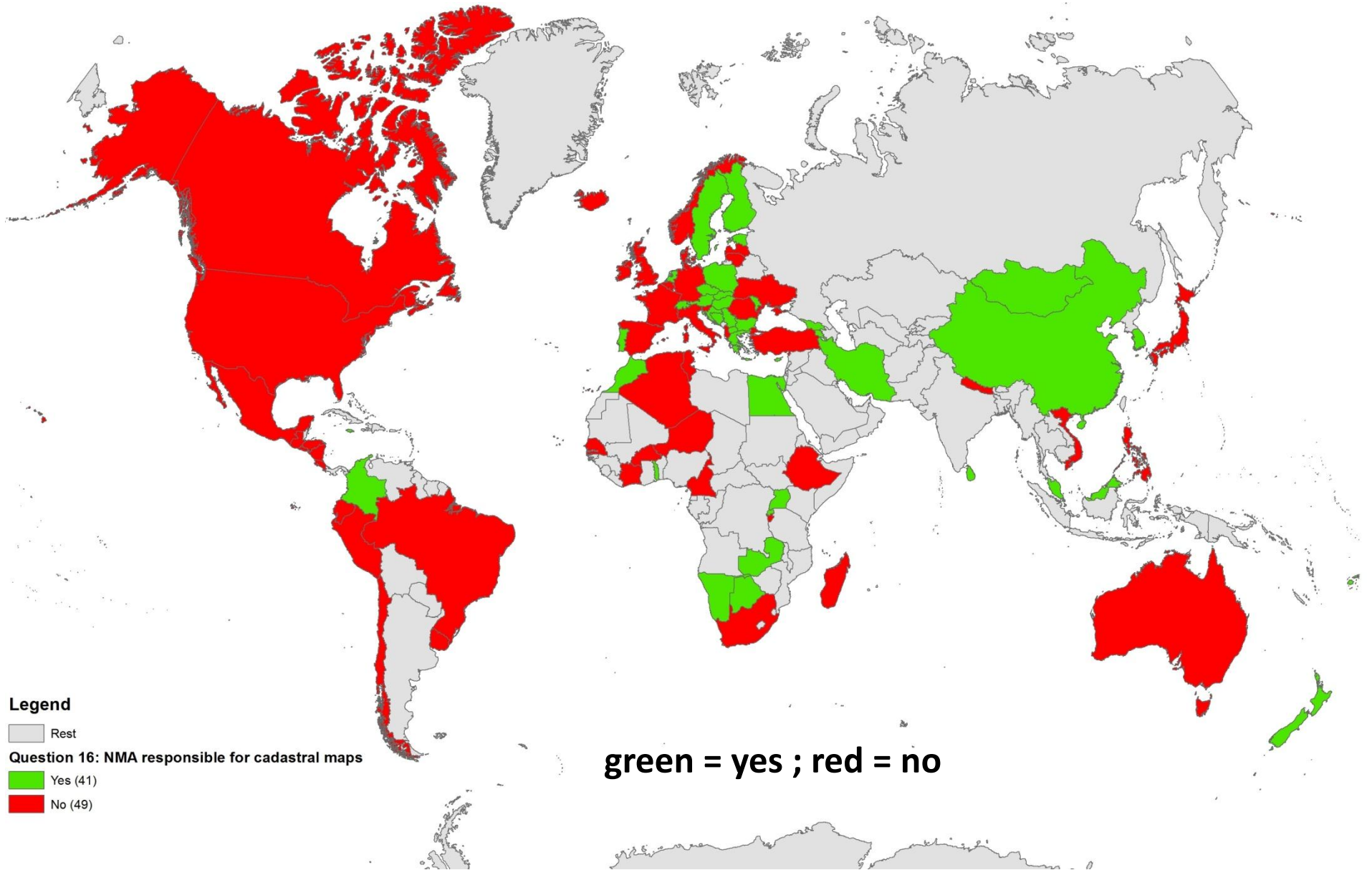
Question 15: Existence of Private Surveyors



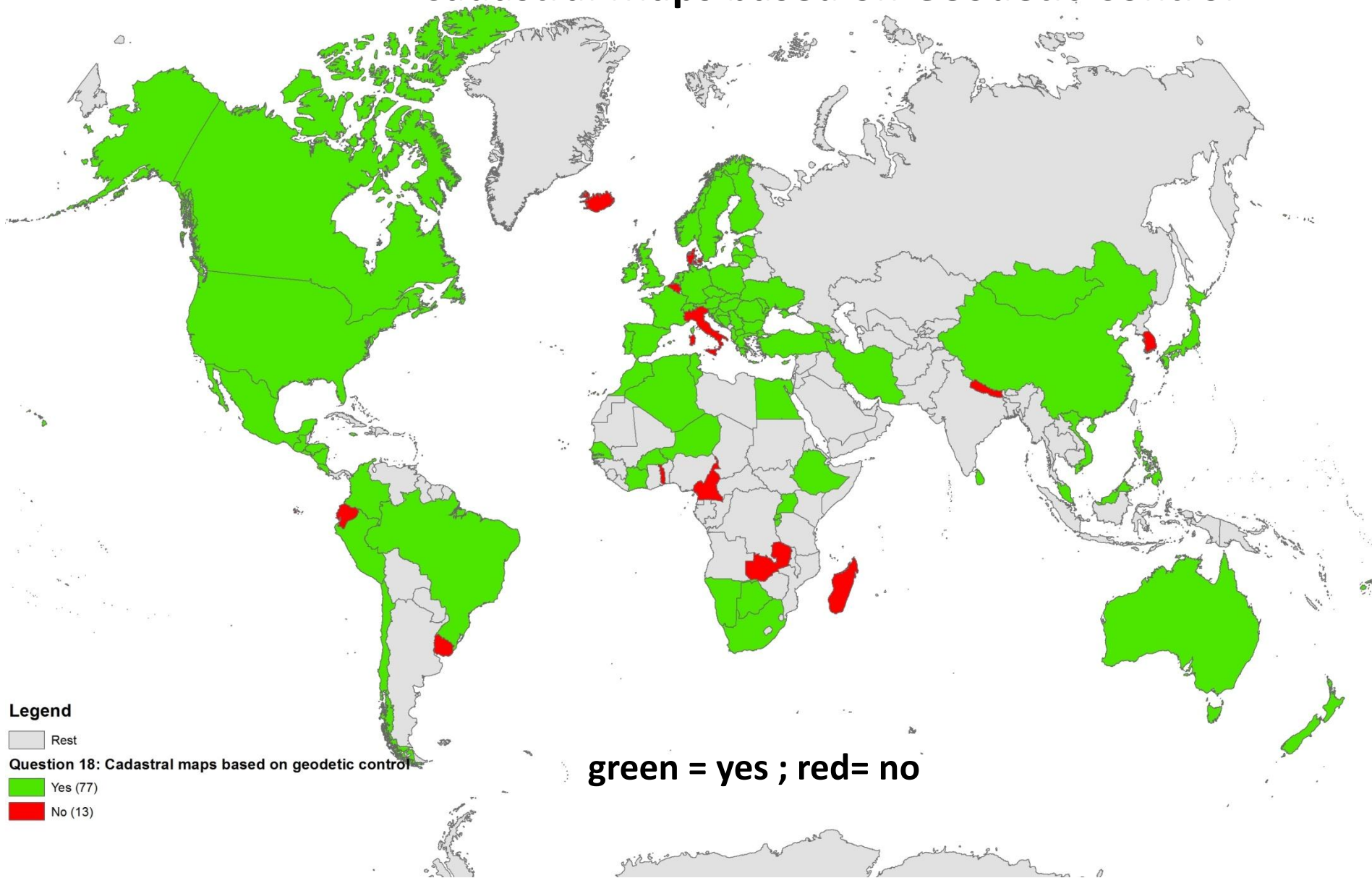
Question 16 : National Coverage of Cadastral Maps



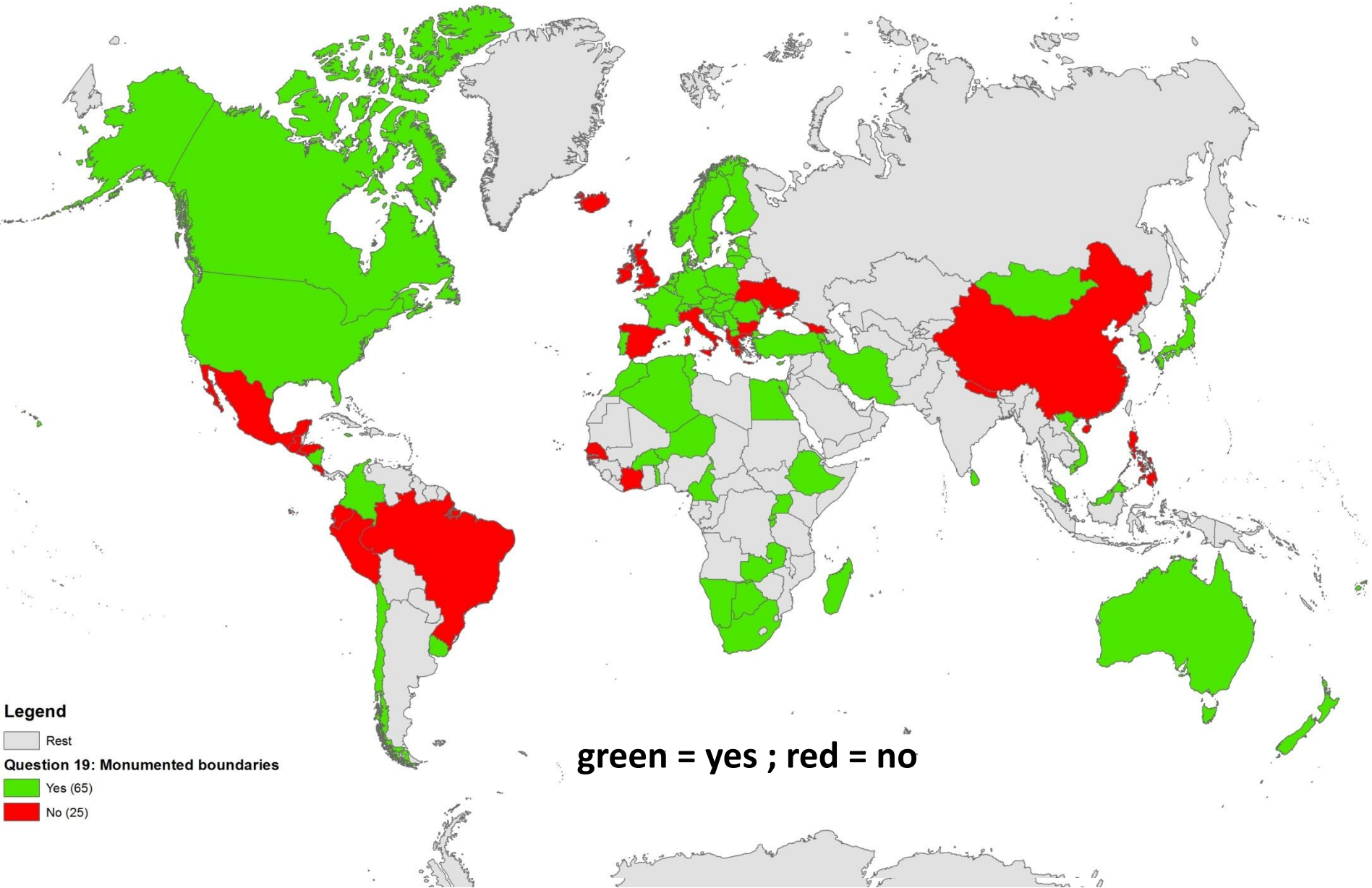
Question 16 : NMA responsibility for Cadastral Mapping



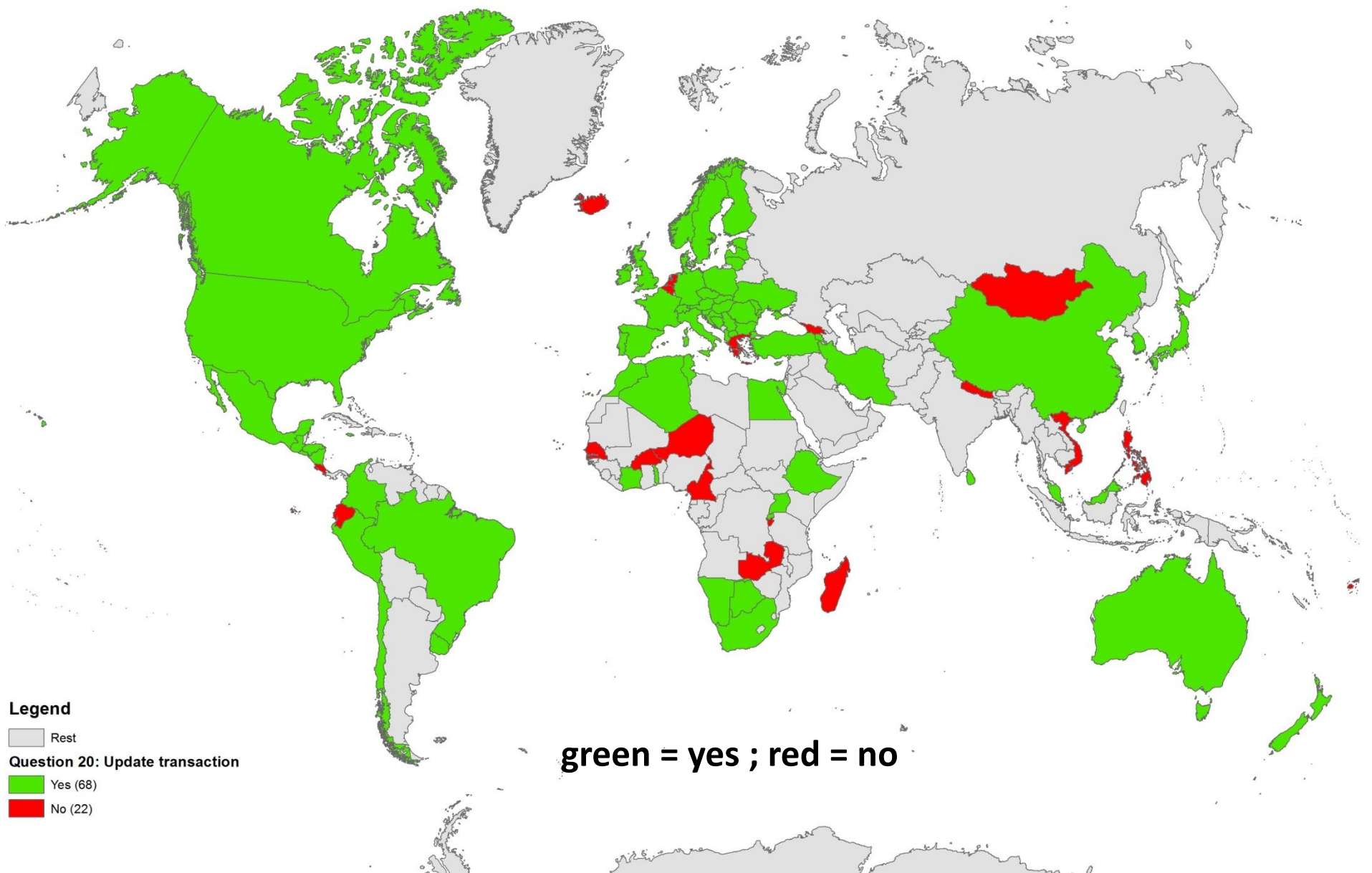
Question 18 : Cadastral Surveys and Cadastral Maps based on Geodetic Control



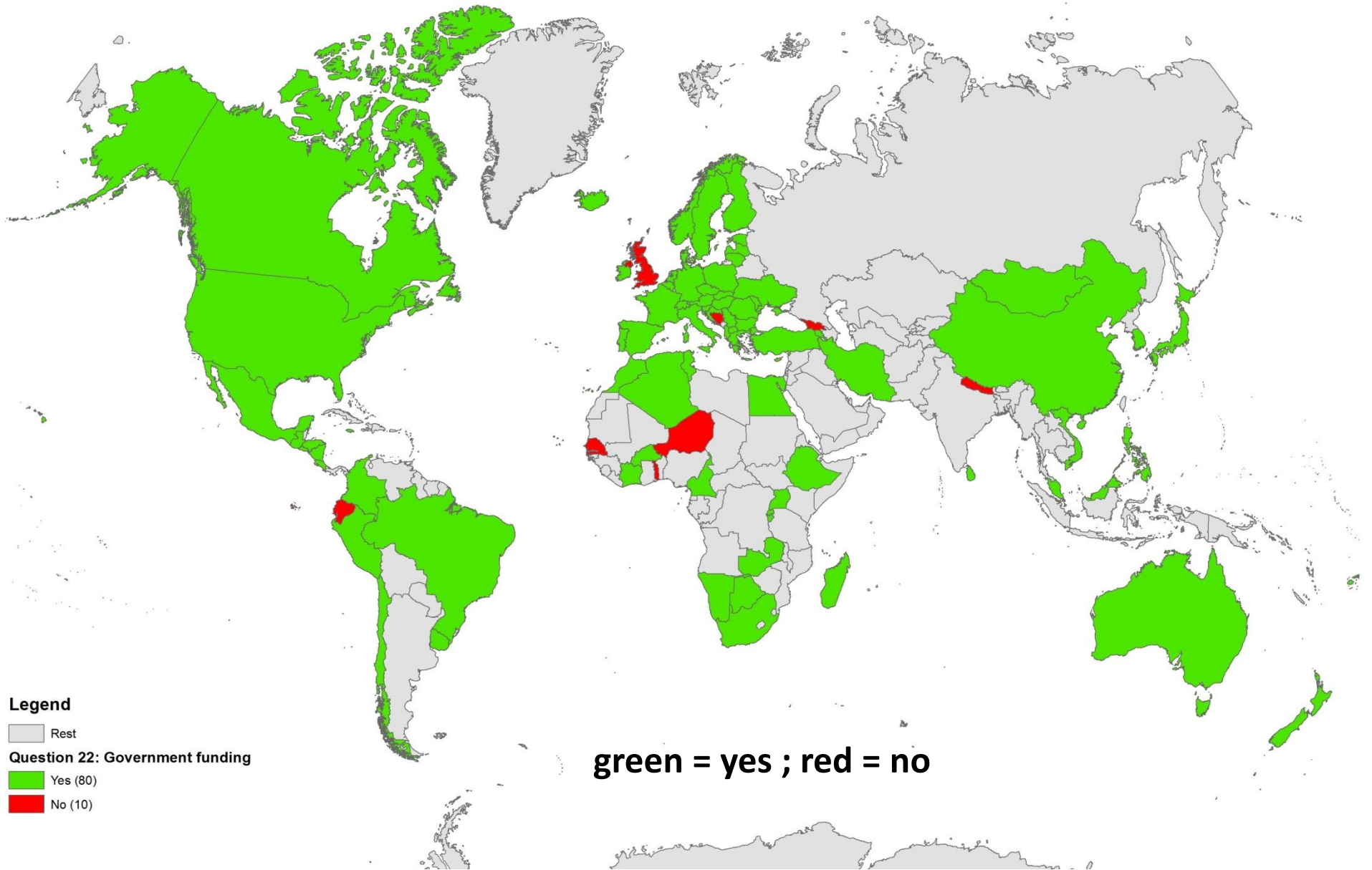
Question 19 : Monumentation of Property Boundaries



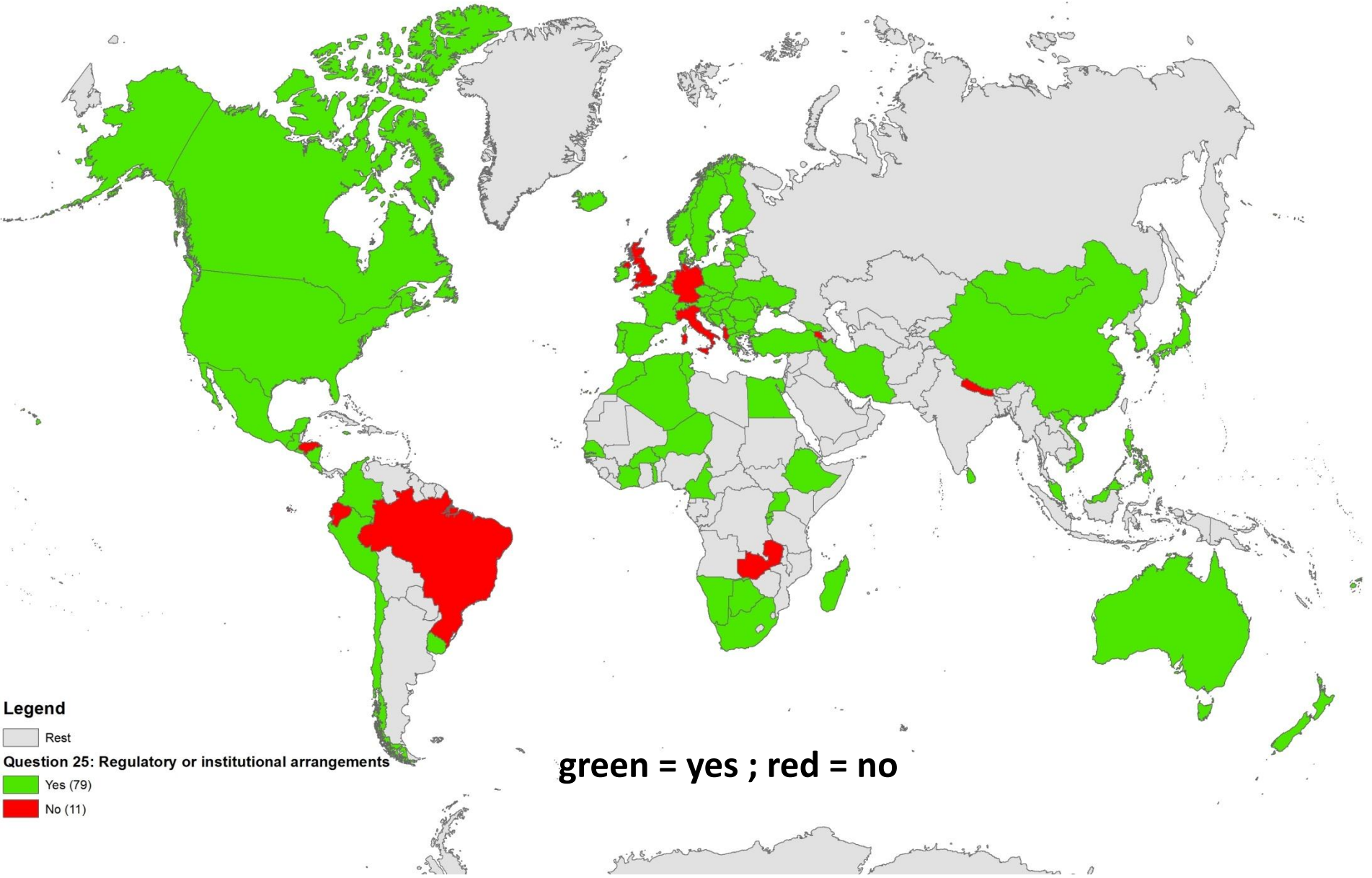
Question 20 : Update of Cadastral Records and Cadastral Maps



Question 22 : Government Funding of Mapping



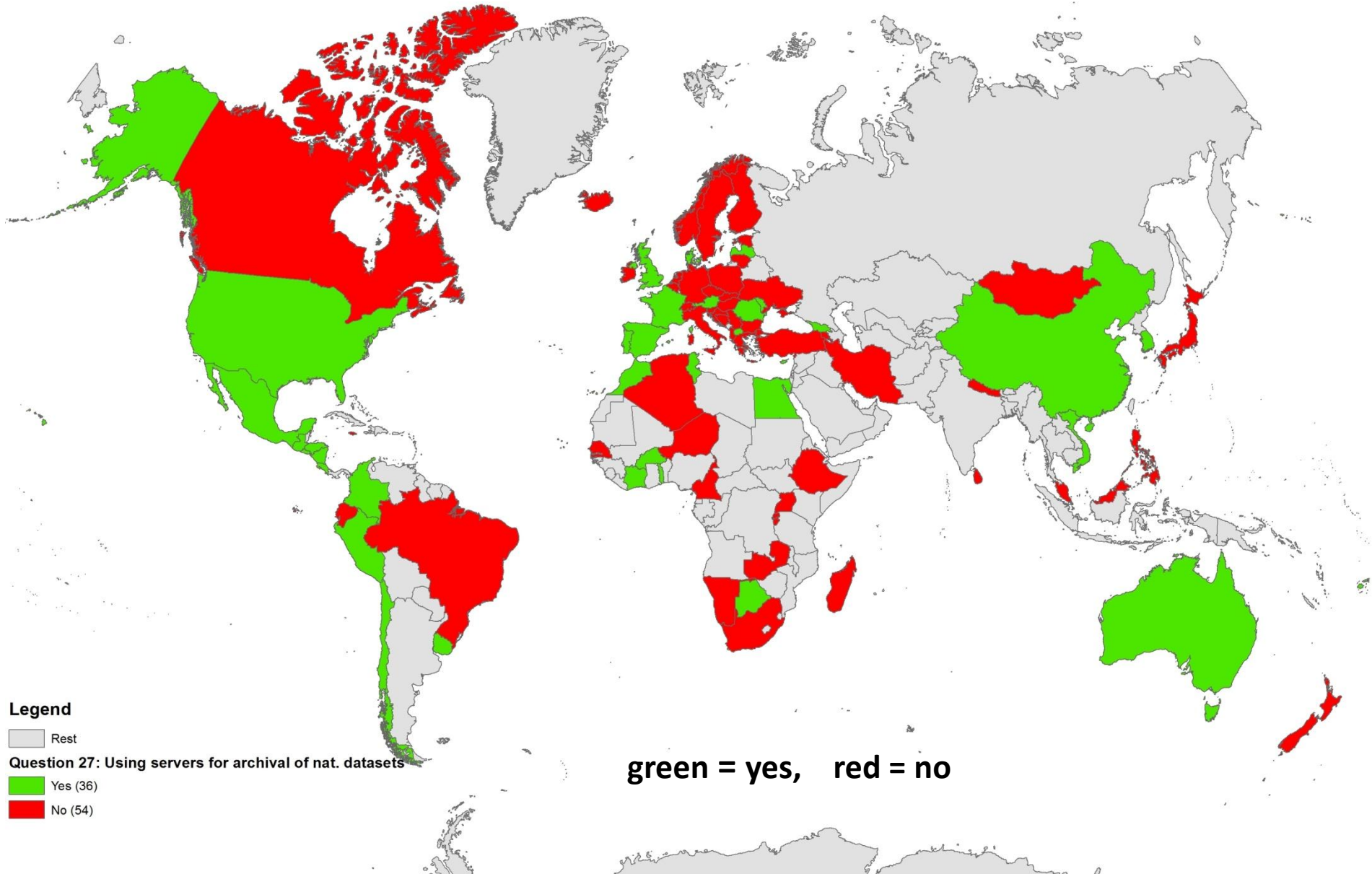
Question 25 : Existence of Laws for a Governmental Mapping Mandate



Legend
Rest
Question 25: Regulatory or institutional arrangements
Yes (79)
No (11)

green = yes ; red = no

Question 27 : Use of Servers for Archival of National Data Sets



Legend
Rest
Question 27: Using servers for archival of nat. datasets
Yes (36)
No (54)

green = yes, red = no



4. Discussion:

4.1. how to still increase the number of returned questionnaires ?

Options: ISPRS-WG IV-2, regional approaches, discussions with map vendors

4.2. how to address the efforts of industry ?

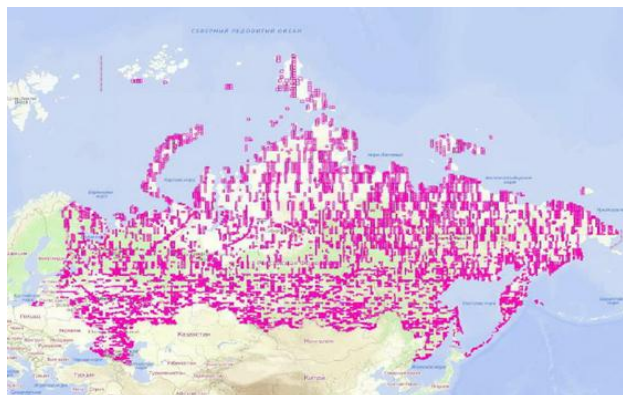
Options: activity by GGIM or by ISPRS

4.2. Industrial Efforts (all data courtesy of Scanex, Russian Federation)

Satellite Image Providers

GeoEye1 GSD 50cm

Satellite Imagery for the
Russian Federation



coverage 2011
by Scanex for
Rosreestr
17M km²

61% coverage by GeoEye1 &
World View 2 by Scanex 2012

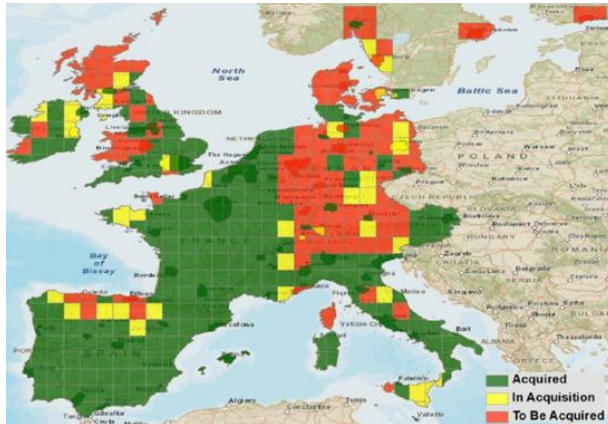


Ikonos 0.8m GSD coverage for Scanex and Yandex
in 2011



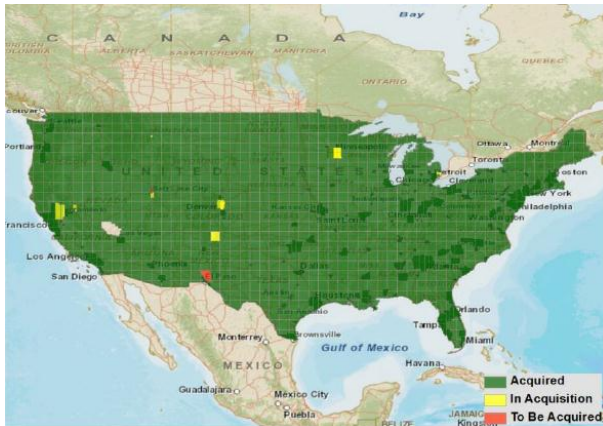
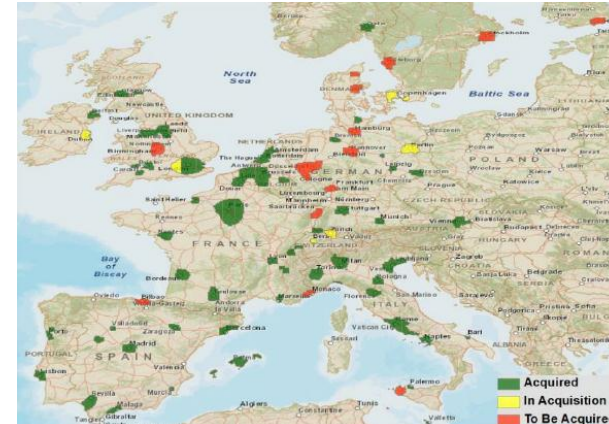
4.2. Industrial Efforts

Microsoft Bingmaps GSD 30cm



Ultracam Imagery 2012

Microsoft Bingmaps GSD 15cm



Google Earth and Google Maps

aerial imagery locally bought or from satellite imagery providers



4.2. Industrial Efforts:

TomTom Road Navigation Coverage



Navteq Road Navigation Coverage



Tasks suggested to be completed between February 6, 2013 and July, 2013

14	draft analysis of survey	<u>G. Konecny</u>	January 15, 2013	completed
15	Preparation of joint report by GGIM and ISPRS for presentation of results at 2 nd GGIM forum	<u>A. Laaribi</u> & <u>G. Konecny</u>	January 20, 2013	in progress
16	Presentation of report at 2 nd GGIM Forum in Qatar	<u>G. Konecny</u>	February 4-6, 2013	Planned
17	Participation in ISPRS WG IV-2 meeting in Novosibirsk for validation of results	<u>G. Konecny</u> <u>A. Laaribi</u>	April 22-26, 2013	Planned
18	Preparation of joint report by GGIM and ISPRS for presentation of verified results at 2 nd Meeting of Experts of GGIM in Cambridge	<u>A. Laaribi</u> & <u>G. Konecny</u>	June 15, 2013	Planned
19	Presentation of report at 2 nd GGIM Expert Meeting in Cambridge, Delivery of publishable materials to printers	<u>G. Konecny</u>	July 24-26, 2013	Planned
20	Publication of results in print	UNGGIM or ISPRS	December 31, 2013	Planned



Conclusion:

- 1. UN-GGIM needs to have the requested information**
- 2. The member countries can help to provide and improve it**
- 3. ISPRS will try its best to obtain it in sustainable cooperation with the help of the member countries and the UN-GGIM Secretariat**