





TRANSBOUNDARY AQUIFERS OF THE WORLD

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ABOUT THIS MAP

This map is about Transboundary Aquifers (TBAs). It shows the state of information presently available on the occurrence and extent of TBAs world-wide. The intention of the map is to provide a global overview of these important shared water resources and to encourage further assessment thereof. The map is based on the most recent inventory results of many active working groups around the world; details on the procedures preparing this map are available in the section 'Map compilation and labelling". The assessments and inventories of TBAs across the world, followed by information exchange among aquifer-sharing States are considered prerequisites for appropriate TBA management. This map is assumed to contribute to awareness raising on the importance on the management of shared aquifer resources and build the needed global knowledge base.

Since its establishment IGRAC has been involved in TBA management activities within the frameworks of the UNECE Transboundary waters assessment, GEF International Waters (IW) Focal Area and the International Shared Aquifer Resources Management (ISARM) initiative led by UNESCO-IHP

The back side of this map is dedicated to an equally important instrument in the management of TBAs: the draft articles on the law of transboundary aquifers. These contain a number of principles that are essential in guiding countries to formalise international cooperation managing transboundary aquifers.

THE ROLE OF INTERNATIONAL LAW AND AGREEMENTS

In 2008, the UN International Law Commission (ILC) adopted a set of draft articles on the law of transboundary aquifers, including a preamble and the commentaries. The draft articles were then transmitted to the UN General Assembly (GA), which adopted the same year Resolution A/ RES/63/124 on the law of transboundary aquifers including in its annex the draft articles. The Resolution "Encourages the States concerned to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers, taking into account the provisions of these draft articles", meaning that States can already refer to the draft articles on the law of transboundary aguifers in the development of cooperation over their transboundary aguifers. The ILC and the GA have thus filled a gap that existed in international law regarding transboundary

A resolution of the GA is a non-binding text, however it has a moral authority. The Resolution on the law of transboundary aquifers is until now the only global instrument on this topic. It can already be considered by States as a reference and as guidelines.

The draft articles on the law of transboundary aquifers apply to the utilisation of transboundary aquifers or aquifer systems; and to the measures for the protection, preservation and manage-



ment of such aquifers or aguifer systems. In addition, the draft articles apply to "other activities that have or are likely to have an impact upon such aquifers or aquifer systems".

The draft articles codify the two core principles of international water law; equitable and reasonable use, and the obligation not to cause significant harm. According to the equitable and reasonable utilisation principle aguifer States "shall utilise transboundary aguifers or aguifer systems in a manner that is consistent with the equitable and reasonable accrual of benefits". Aquifer States "shall [also] aim at maximizing the long-term benefits derived from the use of water", alluding more specifically to the case of non-recharging aquifers. The establishment of a comprehensive utilisation plan by the aquifer States is required and has to take into account present and future needs, as well as available alternative water resources. Finally the utilisation level of a transboundary aquifer should not prevent continuance of its effective functioning. The equitable and reasonable utilisation principle requires the consideration of 'relevant' factors for its implementation. An indicative list of factors is provided. The agreement on the factors and their respective weight are determined by the

The no harm rule addresses here significant harm caused by an aquifer State and due to the utilisation of the transboundary aquifer, and/or also due to other activities that have, or are likely to have, an impact on that transboundary aguifer. The significant harm could be caused also to States in whose territory a discharge zone is located. Aquifer States are obliged "to take all appropriate measures to prevent the causing of significant harm". The draft articles include a provision on the regular exchange of data and information which is a first implementation of the general obligation to cooperate. Finally aquifer States are encouraged to enter into bilateral or regional agreements for the proper management of a transboundary aquifer, which could concern a defined part of the transboundary aquifer or part of the aquifer States with the express condition of not affecting the remaining aquifer State(s). Under the Part on Protection, Preservation and Management, the draft articles include technical provisions related to the protection and preservation of ecosystems, recharge and discharge zones, the prevention, reduction and control of pollution, monitoring and management and encourages States to establish joint mechanisms.

Agreements related to transboundary aquifers are still very few. The only treaty dealing completely with the joint management of a transboundary aquifer is the Convention on the protection, utilization, recharge and monitoring of the Franco-Swiss Genevese aquifer (1st January 2008). The three others concern: - Nubian Sandstone Aquifer System (NSAS) (Chad, Egypt, Libya and Sudan)

The North Western Sahara Aquifer System (Algeria, Libya and Tunisia) Guarani Aquifer System (Argentina, Brazil, Paraguay and Uruguay)

negotiations among the concerned States.

In 2011, the UN GA adopted Resolution 66/104 on the law of transboundary aquifers encouraging again the States concerned to consider the provisions of the draft articles which "to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers" The two Resolutions have raised the topic of transboundary aquifers at the highest level in the international arena, and brought to States awareness about their importance, and the necessity of regulating them in view of their sound management and preservation.

THE DRAFT ARTICLES ON

THE LAW OF TRANSBOUNDARY AQUIFERS

Emphasizing the need to take into account the special situation of developing countries,

Conscious of the importance for humankind of life supporting groundwater resources in all regions of the world, Bearing in mind Article 13, paragraph 1 (a), of the Charter of the United Nations, which provides that the General Assembly shall initiate studies and make recommendations for the purpose of

encouraging the progressive development of international law and its codification, Recalling General Assembly resolution 1803 (XVII) of 14 December 1962 on permanent sovereignty Reaffirming the principles and recommendations adopted by the United Nations Conference on

Environment and Development of 1992 in the Rio Declaration on Environment and Development Taking into account increasing demands for freshwater and the need to protect groundwater re-

Mindful of the particular problems posed by the vulnerability of aquifers to pollution, Convinced of the need to ensure the development, utilization, conservation, management and protection of groundwater resources in the context of the promotion of the optimal and sustainable development of water resources for present and future generations. Affirming the importance of international cooperation and good neighbourliness in this field.

PART ONE: INTRODUCTION

Article 1: Scope

The present draft articles apply to (a) utilization of transboundary aguifers or aguifer systems;

Recognizing the necessity to promote international cooperation,....

(b) other activities that have or are likely to have an impact upon such aquifers or aquifer systems;

(c) measures for the protection, preservation and management of such aquifers or aquifer systems. Article 2: Use of terms

For the purposes of the present draft articles: (a) "aquifer" means a permeable water-bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation (b) "aquifer system" means a series of two or more aquifers that are hydraulically connected;

aguifer system, parts of which are situated in different States: (d) "aquifer State" means a State in whose territory any part of a transboundary aquifer or aquifer system is situated; (e) "utilization of transboundary aquifers or aquifer systems" includes extraction of water, heat and

(c) "transboundary aquifer" or "transboundary aquifer system" means respectively, an aquifer or

minerals, and storage and disposal of any substance; (f) "recharging aquifer" means an aquifer that receives a non-negligible amount of contemporary

(g) "recharge zone" means the zone which contributes water to an aquifer, consisting of the catchment area of rainfall water and the area where such water flows to an aquifer by runoff on the ground and infiltration through soil:

(h) "discharge zone" means the zone where water originating from an aquifer flows to its outlets, such as a watercourse, a lake, an oasis, a wetland or an ocean.

PART TWO: GENERAL PRINCIPLES Article 3: Sovereignty of aquifer States

Each aquifer State has sovereignty over the portion of a transboundary aquifer or aquifer system located within its territory. It shall exercise its sovereignty in accordance with international law and

Article 4: Equitable and reasonable utilization Aquifer States shall utilize transboundary aquifers or aquifer systems according to the principle of

equitable and reasonable utilization, as follows: (a) they shall utilize transboundary aquifers or aquifer systems in a manner that is consistent with the equitable and reasonable accrual of benefits therefrom to the aquifer States concerned; (b) they shall aim at maximizing the long-term benefits derived from the use of water contained

(c) they shall establish individually or jointly a comprehensive utilization plan, taking into account present and future needs of, and alternative water sources for, the aguifer States; and (d) they shall not utilize a recharging transboundary aquifer or aquifer system at a level that would prevent continuance of its effective functioning.

Article 5: Factors relevant to equitable and reasonable utilization 1. Utilization of a transboundary aguifer or aguifer system in an equitable and reasonable manner

within the meaning of draft article 4 requires taking into account all relevant factors, including: (a) the population dependent on the aguifer or aguifer system in each aguife

(b) the social, economic and other needs, present and future, of the aguifer States concerned; (c) the natural characteristics of the aquifer or aquifer system (d) the contribution to the formation and recharge of the aquifer or aquifer system; (e) the existing and potential utilization of the aquifer or aquifer system;

(f) the actual and potential effects of the utilization of the aquifer or aquifer system in one aquife State on other aguifer States concerned; (g) the availability of alternatives to a particular existing and planned utilization of the aquifer or (h) the development, protection and conservation of the aquifer or aquifer system and the costs of

measures to be taken to that effect: (i) the role of the aguifer or aguifer system in the related ecosystem.

2. The weight to be given to each factor is to be determined by its importance with regard to a specific transboundary aguifer or aguifer system in comparison with that of other relevant factors. In determining what is equitable and reasonable utilization, all relevant factors are to be considered together and a conclusion reached on the basis of all the factors. However, in weighing different kinds of utilization of a transboundary aquifer or aquifer system, special regard shall be given to vital human needs.

Article 6: Obligation not to cause significant harm

1. Aquifer States shall, in utilizing transboundary aquifers or aquifer systems in their territories, take

all appropriate measures to prevent the causing of significant harm to other aquifer States or other States in whose territory a discharge zone is located. 2. Aquifer States shall, in undertaking activities other than utilization of a transboundary aquifer or aguifer system that have, or are likely to have, an impact upon that transboundary aguifer or agui-

fer system, take all appropriate measures to prevent the causing of significant harm through that

aquifer or aquifer system to other aquifer States or other States in whose territory a discharge zone

3. Where significant harm nevertheless is caused to another aguifer State or a State in whose territory a discharge zone is located, the aquifer State whose activities cause such harm shall take, in consultation with the affected State, all appropriate response measures to eliminate or mitigate such harm, having due regard for the provisions of draft articles 4 and 5.

Article 7: General obligation to cooperate

1. Aguifer States shall cooperate on the basis of sovereign equality, territorial integrity, sustainable development, mutual benefit and good faith in order to attain equitable and reasonable utilization and appropriate protection of their transboundary aquifers or aquifer systems.

2. For the purpose of paragraph 1, aquifer States should establish joint mechanisms of cooperation.

Article 8: Regular exchange of data and information 1. Pursuant to draft article 7, aquifer States shall, on a regular basis, exchange readily available data

and information on the condition of their transboundary aquifers or aquifer systems, in particular of a geological, hydrogeological, hydrological, meteorological and ecological nature and related to the hydrochemistry of the aquifers or aquifer systems, as well as related forecasts. 2. Where knowledge about the nature and extent of a transboundary aquifer or aquifer system is inadequate, aguifer States concerned shall employ their best efforts to collect and generate more

complete data and information relating to such aquifer or aquifer system, taking into account cur-

rent practices and standards. They shall take such action individually or jointly and, where appropriate, together with or through international organizations 3. If an aquifer State is requested by another aquifer State to provide data and information relating to an aquifer or aquifer system that are not readily available, it shall employ its best efforts to comply with the request. The requested State may condition its compliance upon payment by the requesting State of the reasonable costs of collecting and, where appropriate, processing such data or

4. Aguifer States shall, where appropriate, employ their best efforts to collect and process data and information in a manner that facilitates their utilization by the other aquifer States to which such data and information are communicated.

Article 9 Bilateral and regional agreements and arrangements

For the purpose of managing a particular transboundary aquifer or aquifer system, aquifer States are encouraged to enter into bilateral or regional agreements or arrangements among themselves. Such agreements or arrangements may be entered into with respect to an entire aquifer or aquifer system or any part thereof or a particular project, programme or utilization except insofar as an agreement or arrangement adversely affects, to a significant extent, the utilization, by one or more

other aquifer States of the water in that aquifer or aquifer system, without their express consent.

PART THREE: PROTECTION PRESERVATION AND MANAGMENT

Article 10 Protection and preservation of ecosystems Aquifer States shall take all appropriate measures to protect and preserve ecosystems within, or dependent upon, their transboundary aquifers or aquifer systems, including measures to ensure

that the quality and quantity of water retained in an aquifer or aquifer system, as well as that re-

leased through its discharge zones, are sufficient to protect and preserve such ecosystems.

Article 11: Recharge and discharge zones

1. Aquifer States shall identify the recharge and discharge zones of transboundary aquifers or aquifer systems that exist within their territory. They shall take appropriate measures to prevent and minimize detrimental impacts on the recharge and discharge processes.

2. All States in whose territory a recharge or discharge zone is located, in whole or in part, and which are not aquifer States with regard to that aquifer or aquifer system, shall cooperate with the aguifer States to protect the aguifer or aguifer system and related ecosystems.

Article 12: Prevention, reduction and control of pollution

Aquifer States shall, individually and, where appropriate, jointly, prevent, reduce and control pollution of their transboundary aguifers or aguifer systems, including through the recharge process that may cause significant harm to other aquifer States. Aquifer States shall take a precautionary approach in view of uncertainty about the nature and extent of a transboundary aguifer or aguifer system and of its vulnerability to pollution.

Article 13: Monitoring

1. Aguifer States shall monitor their transboundary aguifers or aguifer systems. They shall, where ever possible, carry out these monitoring activities jointly with other aquifer States concerned and, where appropriate, in collaboration with competent international organizations. Where monitoring activities cannot be carried out jointly, the aquifer States shall exchange the monitored data among

2. Aguifer States shall use agreed or harmonized standards and methodology for monitoring their transboundary aguifers or aguifer systems. They should identify key parameters that they will monitor based on an agreed conceptual model of the aquifers or aquifer systems. These parameters should include parameters on the condition of the aguifer or aguifer system as listed in draft article 8, paragraph 1, and also on the utilization of the aquifers or aquifer systems.

Article 14: Management Aquifer States shall establish and implement plans for the proper management of their transbound-

ary aquifers or aquifer systems. They shall, at the request of any of them, enter into consultations concerning the management of a transboundary aquifer or aquifer system. A joint management mechanism shall be established, wherever appropriate.

Article 15: Planned activities 1. When a State has reasonable grounds for believing that a particular planned activity in its terri-

tory may affect a transboundary aquifer or aquifer system and thereby may have a significant adverse effect upon another State, it shall, as far as practicable, assess the possible effects of such

2. Before a State implements or permits the implementation of planned activities which may affect a transboundary aquifer or aquifer system and thereby may have a significant adverse effect upon another State, it shall provide that State with timely notification thereof. Such notification shall be accompanied by available technical data and information, including any environmental impact assessment, in order to enable the notified State to evaluate the possible effects of the planned activi-

3. If the notifying and the notified States disagree on the possible effect of the planned activities they shall enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation. They may utilize an independent fact-finding body to make an impartial assessment of the effect of the planned activities.

PART FOUR: MISCELLANEOUS PROVISION Article 16: Technical cooperation with developing States

States shall, directly or through competent international organizations, promote scientific, educational, legal and other cooperation with developing States for the protection and management of transboundary aquifers or aquifer systems, including, inter alia (a) strengthening their capacity-building in scientific, technical and legal fields;

(b) facilitating their participation in relevant international programmes; (c) supplying them with necessary equipment and facilities; (d) enhancing their capacity to manufacture such equipment;

view to strengthening cooperation among them in managing the

transboundary aquifer or aquifer system

(f) providing advice on and developing facilities for minimizing the detrimental effects of major activities affecting their transboundary aquifer or aquifer system: (a) providing advice in the preparation of environmental impact assessments (h) supporting the exchange of technical knowledge and experience among developing States with a

(e) providing advice on and developing facilities for research, monitoring, educational and other

Article 17: Emergency situations

1. For the purpose of the present draft article, "emergency" means a situation, resulting suddenly from natural causes or from human conduct, that affects a transboundary aguifer or aguifer system and poses an imminent threat of causing serious harm to aquifer States or other States. 2. The State within whose territory the emergency originates shall: (a) without delay and by the most expeditious means available, notify other potentially affected

States and competent international organizations of the emergency: (b) in cooperation with potentially affected States and, where appropriate, competent internationa organizations, immediately take all practicable measures necessitated by the circumstances to prevent, mitigate and eliminate any harmful effect of the emergency 3. Where an emergency poses a threat to vital human needs, aguifer States, notwithstanding draft articles 4 and 6, may take measures that are strictly necessary to meet such needs. 4. States shall provide scientific, technical, logistical and other cooperation to other States experiencing an emergency. Cooperation may include coordination of international emergency actions and communications, making available emergency response personnel, emergency response equip-

ment and supplies, scientific and technical expertise and humanitarian assistance.

Article 18: Protection in time of armed conflict

Transboundary aguifers or aguifer systems and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non-international armed conflict and shall not be used in violation of those principles and

Article 19: Data and information vital to national defense or security Nothing in the present draft articles obliges a State to provide data or information vital to its national defense or security. Nevertheless, that State shall cooperate in good faith with other States with a view to providing as much information as possible under the circumstances

MAP COMPILATION AND LABELLING

The map presented, encapsulates information provided by various organisations and projects dealing with transboundary aquifer assessments and/or management at regional and continental scales (information sources are given in the table below). It is an update of the 2009 'Transboundary Aquifers of the World Map' (IGRAC 2009). The guiding principle during the compilation of this 2012 map was to stay as close as possible to the information provided by the individual sources, while presenting the information as appropriately as possible for the chosen scale of the map (1: 50,000,000). In a few cases where aquifers coming from different sources were overlapping and non -congruent, delineations with the highest level of certainty were chosen.

Region	Source	Region Cod in aquifer l	
World	UNESCO/BGR (2006)	n/a	
The Americas	UNESCO (2007)	N, C, CB & S	
Europe	UNECE (1999, 2011)	EU	
South Eastern Europe	INWEB (2011), UNECE (1999, 2007, 2011)	EB	
Caucasus	UNECE (2007, 2011)	AS	
Asia	UNESCO/ISARM-Asia (2006), UNECE (2011)	AS	
Arabian Peninsula	UNESCO/ACSAD (1988)	AS	
Africa	UNESCO/BGR (2004)	AF	
Southern Africa	ISARM-SADC (2007), Braune and Xu (2011), SADC (2011)	AF	
Northern Africa			
- Iullemeden	OSS/UNEP/GEF (2008a)	AF	
- North-Western Sahara	OSS/UNEP/GEF (2008b)	AF	
- Nubian Sandstone	IAEA/UNDP/GEF (2007)	AF	
- Mediterranean Africa	IEMED/ CIDOB (2008)	AF	
Western and Central Africa	UNESCO/ ISARM- West and Central Africa (2011)	AF	
Eastern Africa	UNESCO/ISARM-IGAD (2010, 2011)	AF	

For EU countries (plus Switzerland and Norway), this global map also displays transboundary Groundwater Bodies (GWB) as adopted by the Water Framework Directive (WFD). Within this framework, EU Member States are obliged to delineate groundwater bodies (managerial units) to identify the risk of failing to achieve 'good status' by 2015. In many cases, aquifers are subdivided into groundwater bodies while occasionally groundwater bodies may contain multiple aquifers.

Label Aquifer name

AF1 Karoo Sedimentary Aquife

AF2 Coastal Sedimentary Basin V

AF3 Coastal Sedimentary Basin VI

AF4 Rhyolite-Breccia Aquifer

AF6 Khakhea/Bray Dolomite

AF5 SE Kalahri Karoo Basin

Sharing countries

Lesotho, South Africa

Namibia, South Africa

Mozambique, South Africa

Botswana, Namibia, South Africa

Mozambique, Swaziland

Botswana, South Africa

Mapping of TBAs and transboundary GWBs must be seen as a technical step in a wider and often political process between countries towards shared natural resources management. The map contains a number of aquifers and groundwater bodies that are not politically recognised by all countries (some examples can be found in Central Asia). Additionally, this map shows transboundary aquifers where insufficient hydrogeological information results in different/non-conform delineations across borders. This is among others the case for some of the TBAs at the Russian/Kazakhstan border and for several groundwater bodies transgressing the border between Austria and Hungary.

Solid red borders indicate that the aquifers' boundaries are known and confirmed by all sharing countries. If boundaries are only approximately known, it is highlighted by dashed red lines. Limited information is available on the extent of TBAs in some parts of Africa and Asia. In these cases, the transboundary aguifers are presented by circular or elliptical shapes. The size and position of these shapes indicate the assumed size and position of the actual aguifers. Examples can be found in West and Central Africa; under the umbrella of ISARM TBA-identification and mapping only recently started here. Transboundary aguifers and groundwater bodies smaller than 6,000 km² are represented by symbols instead of exact delineations (even if delineations are well-known). For more detailed delineations of these smaller aquifers in Europe, Caucasus and Central Asia, please refer to the 2nd UNECE assessment (UNECE, 2011 and www.unece.org). Small TBAs with unknown extent are presented by crosses. In the Americas and Europe, various transboundary aquifers and groundwater bodies are identified as overlapping or superimposing each other. For the larger TBAs and transboundary GWBs, the map differentiates between TBAs overlapping each other and transboundary GWBs and TBAs overlapping each other. For smaller overlapping TBAs and groundwater bodies, this

of numbering coming from various regional and global sources exist. Due to overlaps between labels from the various sources, new labels were adopted specific to this map. For the aguifers of the Americas, labels are exactly the same as used by the Organization of American States (OAS). For the other regions, a code was created comprised of two letters to identify the continent or region and a number to identify the individual aguifer. The labels serve as an identifier, with more information (such as name etc.) given accordingly in the table on the right hand side.

All TBAs and transboundary GWBs on this map are labelled. Currently, various inconsistent versions

(national and international, governmental and non-governmental) are welcome to provide comments and suggestions about this map.

The knowledge on transboundary aquifers is still limited. Accordingly, individuals and organisations



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imply the expression of any opinion whatsoever on the part of IGRAC, UNESCO, WMO or the Government of the Netherlands concerning the legal status of any country, territory, city or area, nor of its authorities and sovereignty on its territory and natural resources, and delineation of its frontiers or boundaries. Furthermore, the location and boundaries of several transboundary aquifers have not yet been confirmed by representatives of all countries involved. In such cases, an effort was made to indicate on the map the corresponding provisional status.

COLOPHON

The mission of the International Groundwater Resources Assessment Centre (IGRAC) is to facilitate and promote global sharing of information and knowledge required for sustainable groundwater resources development and management. As an independent and non-profit centre, IGRAC operates under auspices of United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Meteorological Organisation (WMO). IGRAC is an in-house partner of UNESCO-IHE in Delft, the Netherlands, and receives financial support from the Government of the Netherlands.

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Table annotation Aguifer types as mentioned on WHYMAP Large aquifer basins

Complex hydrogeological structures Local and shallow aguifers Aq = aquifer, Bol. = Bolivia, Br. = Brazil, Col.= Colombia, Eq. = Ecuador, GWB = groundwater body AF7 Romotswa Dolomite Basir Botswana, South Africa 600 AF8 Limpopo Basin Mozambique, South Africa, Zimbabw 20,000 Botswana, South Africa, Zimbabwe 14,300 AF9 Tuli Karoo sub-basin AF10 Northern Kalahari / Karoo Basin Angola, Botswana, Namibia, Zambia 144,400 11,500 AF11 Save Aluvial Mozambique, Zambia AF12 Eastern KalahariKaroo Basin 39,600 Botswana, Zimbabwe AF13 Cuvelai and Ethosa Basin Angola, Namibia 202.400 AF14 Nata Karoo Sub-basin Angola, Botswana, Namibia, Zambia, Zimbabwe 91,000 AF15 Coastal Sedimentary Basin IV Angola, Namibia AF16 Medium Zambesi Aquifer Zambia, Zimbabwe 10,700 AF17 Shire Valley Alluvial Aquifer 6,200 Malawi, Mozambique Mozambigue, Zambia 21,200 AF18 Arangua Alluvial AF19 Sand and Gravel Aquifer Malawi, Zambia 25,300 AF20 Coastal Sedimentary Basin II Mozambique, Tanzania 23,100 40,000 AF21 Karoo Sandstone Aquifer Mozambique, Tanzania AF22 Kalahari/Katangian Basin Zambia, DR Congo 15.700 257,000 AF23 Congo Intra-cratonic Basir Angola, DR Congo Malawi, Tanzania, Zambia 1, 2, 3 25,800 AF24 Weathered basement AF25 Karoo-Carbonate CAR, Congo, South Sudan 941.100 457,200 AF26 Tanganyika Burundi, DR Congo, Tanzania, Rwanda AF27 Dolomitic Basin Angola, Congo, DR Congo 21,300 2,300 AF28 Coastal Sedimentary Basin II Angola, DR Congo AF29 Cuvette Centrale Congo, DR Congo 814,800 Congo, Gabon 16,800 AF31 Coastal Sedimentary Basin Kenya, Tanzania AF32 Kilimanjaro Aquifer Kenva. Tanzania 14,600 23,500 7,200 Congo, Gabon AF35 Mgahinga DR Congo, Rwanda, Uganda 4,400 AF36 Kagera Aquifer Tanzania, Uganda AF37 Western Rift valley Sediment 29,500 DR Congo, South Sudan, Uganda AF38 Merti Aquifer Kenya, Somalia 13,600 AF39 Mount Elgon Aquifer Kenya, Uganda 5,400 19,700 Congo, Gabon 85,000 Cameroon, CAR, Gabon AF42 Rio DelRey Cameroon, Nigeria 23,900 24,000 Ethiopia, Kenya, Somalia AF44 Jubba 34,600 Ethiopia, Somalia AF45 Shabelle Ethiopia, Somalia 31.000 AF46 Sudd Basin Ethiopia, Kenya, South Sudan 331,700 AF47 Tano Basin Cote d'Ivoire, Ghana 73,400 1, 3 70,900 Benin, Ghana, Nigeria, Togo Cote d'Ivoire, Guinea, Liberia 47,300 Cameroon, CAR, Chad, Sudan 38,400 Cameroon, Nigeria AF52 Lake Chad Basir Chad, Niger, CAR, Nigeria, Camerooi 1,300,500 AF53 Baggara Basir CAR, South Sudan, Sudan 239,300 47,800 Benin, Burkina Faso, Ghana, Togo Guinea, Mali, Senegal 185.500 AF56 Irhazer-Iullemeden Basin Algeria, Benin, Mali, Niger, Nigeria 545,400 159,500 AF57 Liptako-Gourma Aquifer Burkina Faso, Niger AF58 Senegalo-Mauretanian Basin Gambia, Guinea-Bissau, Mauritania, Senegal, W-Sahara 1 331,400 AF59 African Rift Valley Aquifer Djibouti, Ethiopia 50,700 Burkina Faso, Mali, Niger 36,500 AF61 Gedaref Ethiopia, Sudan 38,700 Chad, Sudan 1,500 AF63 Nubian Sandstone Aquifer System Chad, Egypt, Libya, Sudar 2,608,000 AF64 Taoudeni Basin Algeria, Mali, Mauritania 936,100 AF65 Tin-Séririne Basin Algeria, Niger 73.700 AF66 l'Air Crystalline Aquifer 28,400 Algeria, Mali, Niger AF67 Mourzouk-Djado Basin 350,900 Chad, Lybia, Tunesia AF68 Tindouf Aquifer Algeria, Morocco 159.500 AF69 Northwest Sahara Aquifer System 1,189,500 Algeria, Libya, Tunisia AF70 Errachidia Basin Algeria, Morocco 1, 2, 3 64,100 AF71 Merti Aquifer Kenya, Somalia AS1 Western Aquifer Egypt, Israel, Palestinian Territor 14,400 AS2 Coastal Aquifer Israel, Palestinian Territory 3,600 1,600 AS3 Northeastern Aquifer Israel, Palestinian Territory AS4 Nahr el Kabir (Cenemonian-Turonian) Israel, Lebanon, Syria 12,500 AS5 Paleogene and Cretaceous aquifers Jordan, Saudi Arabia 2,097,700 Bahrain, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Ara- 1 37,300 AS6 Paleogene Aquifer bia, Syria, United Arab Emirates, Yemen AS7 Bazalt-Azrag Jordan, Syria 28,900 AS8 Psou aquifer Russia, Georgia 171,700 Russia, Kazakhstan, Russia 9,700 AS10 Eocene-Helvtian Irag, Syria, Turkey 1, 2, 3 AS11 RU2 Kazakhstan, Russia 1, 3 177,000 AS12 Leninak-Shiraks aquife Azerbaijan, Armenia, Iran, Turkey AS13 Terek aquifer Georgia, Russia AS14 Leninak-Shiraks aguifer Azerbaijan, Armenia, Iran, Turkey 3,700 AS16 Ktsia-Khrami aquifer Azerbaijan, Georgia AS17 Agsley—Akstafa/Tayush—Toyuz aquifer Azerbaijan, Azerbaijan, Armenia 7,100 AS18 Alazan-Agrichay aquifer 8,500 Azerbaijan, Georgia AS19 Pre-Caspian aquifer Kazakhstan, Russia 198,300 AS20 Sulak Aguifer Georgia, Russia AS21 Nakhichevan/Larijan and Djebrail aqs Azerbaijan, Armenia, Georgia, Iran, Turkey, Russia 3,200 AS22 Herher, Malishkin and Jermuk aquifers Armenia, Azerbaijan AS23 Vorotan-Akora aquifer Armenia, Azerbaijan AS24 Nakhichevan/Larijan and Djebrail aq Azerbaijan, Armenia, Georgia, Iran, Turkey, Russia 4,500 AS25 Iori/Gabirri aquifer Azerbaijan, Russia AS26 Lenkoran/Astara Azerbaijan, Iran AS27 Samur aquifer Azerbaijan, Russia 6,400 Kazakhstan, Russia 2,900 AS28 Syrt aquifer AS29 as above Kazakhstan, Russia AS30 RU4 10,700 Kazakhstan, Russia AS31 Ural Kazakhstan, Russia 120,500 1, 2, 3 AS32 South-Pred-Ural aquife Kazakhstan, Russia 13,800 AS33 RU1 Kazakhstan, Russia 2,781,200 AS34 North-Kazakhstan aquifer Kazakhstan, Russia 220,700 AS35 Amu-Darya Uzbekistan, Kazakhstan, Turkmenista 166,900 257,700 AS36 Syr-Darya 1 Uzbekistan, Kazakhstan AS37 Xorezm Uzbekistan, Turkmenistan 6,100 AS38 Sarakhs Aquifers Iran, Turkmenistan AS40 Sherabad Uzbekistan, Turkmenistan AS41 Amudaryia Afghanistan, Tajikistan, Uzbekistan 1,500 AS42 Kofarnihon aquifer Tajikistan, Uzbekistan AS43 Karatag/North-Surhandarya aquifer Tajikistan, Uzbekistan 4,600 AS44 Zeravshan aquifer 2,700 Tajikistan, Uzbekistan AS45 Dustlik Tajikistan, Uzbekistan, Kazakhstar 1,900 AS46 Havost Tajikistan, Uzbekistan AS47 Pretashkent aquifer 1,600 Kazakhstan, Uzbekistan AS48 Zafarobod aquifer Tajikistan, Uzbekistan 1.200 AS49 Syr-Darya 3 Tajikistan, Uzbekistan AS50 Kokaral Tajikistan, Uzbekistan AS51 Dalverzin aquifer Tajikistan, Uzbekistan 2,000 AS52 Ahangaran ajikistan, Uzbekistan 1,300 AS53 Sulvukta-Batken-Nau-Isfara aquifer Taiikistan, Uzbekistan 3.900 AS54 South Talas aquifer Kazakhstan, Kyrgyzstan 1,200 AS55 North Talas aguifer Kazakhstan, Kyrgyzstan 1,100 AS56 Chust-Pap aquifer Tajikistan, Uzbekistan Kyrgyzstan, Tajikistan, Uzbekistan AS57 Shorsu aquifer AS58 Sokh aquifer Kvrgvzstan, Uzbekistan 2,400 AS59 Syr-Darya 2 Tajikistan, Uzbekistan AS60 Almos-Vorzik aguifer Kyrgyzstan, Uzbekistan AS61 Kasansay aquifer Kyrgyzstan, Uzbekistan Kyrgyzstan, Uzbekistan AS62 Nanay AS63 Iskovat-Pishkaran aguifer Kyrgyzstan, Uzbekistan AS64 Naryn aquifei Kyrgyzstan, Uzbekistan AS65 Yarmazar Kyrgyzstan, Uzbekistan AS66 Chimion-Aval Kyrgyzstan, Uzbekistan AS67 Maylusu aquife Kyrgyzstan, Uzbekistan AS68 Karaungur Kvrgvzstan, Uzbekistan AS69 Osh-Aravan aquifer Kyrgyzstan, Uzbekistan 1,700 AS70 Vakhsh aguifer Afghanistan, Tajikistan AS71 Chu/Shu aquifer 14,300 Kazakhstan, Kyrgyzstan AS72 Zharkent aguifer 40,700 China, Kazakhstan 2.500 AS73 Tekes aquifer China, Kazakhstan AS74 Tacheng Basin/Alako China, Kazakhstar 49,500 143,400 AS75 Preirtysh aguifer Kazakhstan, Russia 1, 3 AS76 Zaisk aquifer 59,600 China, Kazakhstan AS77 Yenisei upstream Mongolia, Russia 1, 3 190,500 AS78 India River plain India. Pakistan 1, 2, 3 772,200 AS79 Southern of Himalayas India, Nepal 1, 2, 3 192,100

Type¹ Area [km²

11,700

85,100

29,700

Label Aquifer name

AS81 Nu River Valley

AS82 South Burma

AS80 Ganges River plain

AS83 Upriver of Zuo Rive

	AS85 AS86	Beilun River Basin Yalu River Valley	China, Vietnam China, Democratic Pe
	AS87 AS88	Middle Heilongjian-Amur River Basin New Guinea Island	China, Russia Indonesia, Papua Nev
	EB1 EB2	Secovlje-Dragonja/Istra aquifer Mirna/Istra aquifer	Croatia, Slovenia Croatia, Slovenia
	EB3 EB4	Mirna aquifer Obmocje izvira Rižane aquifer	Croatia, Slovenia Croatia, Slovenia
	EB5 EB6	Opatija/Istra aquifer aquifer Notranjska Reka aquifer (part of Bistrica-Snežnik)	Croatia, Slovenia
	EB8	Rijecina – Zvir aquifer	Croatia, Slovenia
	EB9 EB10	Novokracine aquifer Cerknica/ Kupa aquifer,	Croatia, Slovenia Croatia, Slovenia
	EB11 EB12	Kocevje Goteniška gora aquifer, Radovica-Metlika/ Zumberak aquifer	Croatia, Slovenia Croatia, Slovenia
	EB13 EB14	Ormoz-Sredisce ob Drava/Drava-Varazdin aq. Bregana aquifer	Croatia, Slovenia Croatia, Slovenia
	EB15 EB16	Bregana-Obrezje/Sava- Samobor Bizeljsko/ Sutla aquifer	Croatia, Slovenia Croatia, Slovenia
	EB17	Boc aquifer	Croatia, Slovenia
	EB18 EB19	Rogaška aquifer Atomske toplice aquifer	Croatia, Slovenia Croatia, Slovenia
	EB20 EB21	Bohor aquifer Orlica aquifer	Croatia, Slovenia Croatia, Slovenia
	EB22 EB23	Dolinsko-Ravensko/ Mura aquifer Kupa aquifer	Croatia, Slovenia Bosnia & Herzegovina
	EB24 EB25	Pleševica/ Una aquifer Krka aquifer	Bosnia & Herzegovina Bosnia & Herzegovina
	EB26 EB27	Cetina aquifer Neretva Right coast aquifer	Bosnia & Herzegovina Bosnia & Herzegovina
	EB28 EB29	Trebišnjica/Neretva Left coast aquifer Dinaric Littoral (West Coast aquifer)	Bosnia & Herzegovina Bosnia & Herzegovina
	EB30	Bileko Lake aquifer	Bosnia & Herzegovina
	EB31 EB32	Posavina I/ Sava aquifer Srem-West Srem/ Sava aquifer	Bosnia & Herzegovina Croatia, Serbia
	EB33 EB34	South Western Backa/Dunav aquifer Mura aquifer	Croatia, Serbia Croatia, Hungary
	EB35 EB36	Drava/ Drava West aquifer Baranja/Drava East	Croatia, Hungary Croatia, Hungary
	EB37 EB38	Danube-Tisza-interflowe/Backa aquifer (Northeast) Backa/Danube -Tisza Interfluve	Hungary, Serbia Croatia, Hungary, Ror
	EB39 EB40	Upper Pleistocenesomes alluvial fan Pleist-Hol. Mures/Maros alluvial fan aquifer	Hungary, Romania, Se Hungary, Romania
	EB41 EB42	Körös-valley, Sárrét, shallow/Crisuri aquifer Körös – Crisuri holocene	Hungary, Romania Hungary, Romania
	EB43 EB44	Hortobágy-Nagykunság Bihar Northern Part Skadar/Shkoder Lake, Dinaric east coast aquifer	Hungary, Romania Albania, Montenegro
	EB45	N and S Banat or N and Mid Banat aquifer	Hungary, Romania, Se
	EB46 EB47	Nyírség, keleti rész / Nyírség, east margin aquifer Somes/Szamos alluvial fan aquifer	Hungary, Romania, U
	EB48 EB49	Macva-Semberija aquifer Tara Massif	Bosnia & Herzegovina Bosnia & Herzegovina
	EB50 EB51	Lim aquifer Pester aquifer	Montenegro, Serbia Montenegro, Serbia
	EB52 EB53	Metohija aquifer Beli Drim/Drini Bardhe aquifer	Montenegro, Serbia Albania, Serbia
	EB54 EB55	Tetovo-Gostivar Korab/Bistra – Stogovo aquifer	Macedonia, Serbia Albania, Macedonia
	EB56 EB57	Jablanica/Golobordo aquifer Prespa and Ohrid Lake aquifer	Albania, Macedonia Albania, Greece, Mac
	EB58	SYSTIMA TRIKLARIOU KASTORIAS	Albania, Greece
	EB59 EB60	Mourgana Mountain/ Mali Gjere aquifer SYSTIMA POGONIANIS	Albania, Greece Albania, Greece
	EB61 EB62	Nemechka/Vjosa-Pogoni aquifer Pelagonia- Florina/Bitolsko aquifer	Albania, Greece Greece, Macedonia
	EB63 EB64	Systima Axiou aq Systima Axiou GWB	Greece, Macedonia Greece, Macedonia
	EB65 EB66	Systima Doiranis aq Systima Doiranis GWB	Greece, Macedonia Greece, Macedonia
	EB67 EB68	Sandansky-Petrich aquifer Sandansky valley aquifer	Bulgaria, Greece, Mad Bulgaria, Greece, Mad
	EB69 EB70	Petrich valley aquifer FYROM-Central Serbia	Bulgaria, Greece, Mad Macedonia, Serbia
	EB71 EB72	FYROM-SW Serbia Zemen	Macedonia, Serbia Bulgaria, Serbia
	EB73 EB74	Stara Planina/ Salasha Montana aquifer As above	Bulgaria, Serbia Bulgaria, Serbia
	EB75 EB76	Miroc & Golubac Dacian basin	Romania, Serbia Romania, Serbia
	EB77 EB78	Orvilos-Agistros/Gotze Delchev aquifer Nastan-Trigrad	Bulgaria, Greece Bulgaria, Greece
	EB79 EB80	Smolyan Rudozem	Bulgaria, Greece Bulgaria, Greece
	EB81 EB82	Erma Reka Evros/Meric	Bulgaria, Greece Greece, Turkey
	EB83	Orestiadas System	Bulgaria, Greece, Turl
	EB84 EB85	Orestiada/Svilengrad-Stambolo/Edirne aquifer Topolovgrad Massif aquifer	Bulgaria, Greece, Turl Bulgaria, Turkey
	EB86 EB87	Malko Tarnovo kasrt waterbearing massif Dobrudja/Dobrogea Neogene – Sarmatian aq	Bulgaria, Turkey Bulgaria, Romania
	EB88 EB89	Dobrudja/Dobrogea aquifer Danube-Prut	Bulgaria, Romania Romania, Moldova, U
	EB90 EB91	Middle Sarmantian Pontian aquifer Prut	Romania, Moldova, U Romania, Moldova
	EU1 EU2	LOW MIÑO IE_NW_G_082	Portugal, Spain Ireland, United Kingdo
	EU3 EU4	IEGBNI_NW_G_048 IE_NW_G_082	Ireland, Ireland, Unite
	EU5 EU6	IEGBNI_NW_G_028 IEGBNI_NW_G_050	Ireland, United Kingdo Ireland, United Kingdo
	EU7 EU8	IEGBNI_NB_G_007 CIUDAD RODRIGO	Ireland, United Kingd
	EU9	Moraleja aquifer	Portugal, Spain Portugal, Spain
	EU10 EU11	VEGAS BAJAS Dom. plissé Pyrénées axiales et alluvions IVair	Portugal, Spain Andorra, France, Spai
	EU12 EU13	Sables du Landien des Flandres Sables du Landien d'Orchies	Belgium, France, Neth France, Belgium
	EU14 EU15	cvs_0160_gwl_1 Zout grondwater in ondiepe zandlagen	Belgium, France, Neth Belgium, Netherlands
	EU16 EU17	Calcaires de l'Avesnois Socle du Brabant	Belgium, France Belgium, France
	EU18 EU19	cks_0200_gwl_1 Grès du Lias inférieur d'Hettange Luxembourg	Belgium, Netherlands Belgium, France, Luxe
	EU20 EU21	Calcaires et marnes jurassiques chaîne du Jura	France, Switzerland
	EU22	Grès vosgien captif non minéralisé Calcaires Juras. chaîne du Jura - BV Doubs et	France, Germany France, Switzerland
	EU23 EU24	Calcaires Juras. sous couverture du Pays de G Genevese aquifer	France, Switzerland France, Switzerland
	EU25 EU26	Calcaires jurassiques BV de la Jougnena et Orbe Grès du Trias inférieur du bassin houiller	France, Switzerland France, Germany
	EU27 EU28	Domaine plissé BV Cenise et Pô Grès vosgien en partie libre	France, Italy France, Germany
	EU29	Domaine plissé BV Roya, Bévéra	France, Italy
	EU30 EU31	DE_GB_3_03 Pliocène de Haguenau et nappe d'Alsace	Germany, Netherland France, Germany, Sw
	EU32 EU33	DE_GB_Ei22 DE_GB_Ei23	Denmark, Germany Denmark, Germany
	EU34 EU35	Wiedau aquifer Deep GWB – thermal water	Denmark, Germany Austria, Germany
	EU36	Fleons-Cimon	Austria, Italy
	EU37 EU38	Massicci carbonatici della catena paleocarnica 1 Catena paleocarnica centrale	Austria, Italy Austria, Italy
	EU39 EU40	Massicci carbonatici della catena paleocarnica 2 Kobariški stol aquifer	Austria, Italy Italy, Slovenia
	EU41	Catena paleocarnica orientale - Val Canale	Austria, Italy
	EU42 EU43	Cividalese Canin	Italy, Slovenia Italy, Slovenia
	EU44 EU45	Massicci carbonatici della catena paleocarnica 3 Flysch goriziano	Austria, Italy Italy, Slovenia
	EU46 EU47	Alta pianura isontina Vrtojbensko polje aquifer	Italy, Slovenia Italy, Slovenia
	EU48 EU49	Rabeljski rudnik aquifer Gail	Italy, Slovenia Italy, Slovenia
	.5 +5		,, 5.0701110
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AS84	Mekong River plain		1, 3	302,200	EU55	Karstwasser-Vorkommen Karawanken	Austria, Slovenia	2
AS85 AS86	Beilun River Basin Yalu River Valley	China, Vietnam China, Democratic People's Republic of Korea	2, 3	47,200 19,500		Cerneško- Libeliško aquifer Kucnica aquifer	,	2
AS87	Middle Heilongjian-Amur River Basin	· · ·		155,500		Raabtal aquifer		1
AS88	New Guinea Island			465,300		Raba shallow aquifer,		1
EB1	Secovlje-Dragonja/Istra aquifer		2	300		Raba Porous cold and thermal Raba Koezeg mountain fractured aquifer	0,	1
EB2 EB3	Mirna/Istra aquifer Mirna aquifer		2			Groundwaterbody Hügelland Raab West		1
EB4	Obmocje izvira Rižane aquifer		2			Lafnitztal aquifer	0,	1
EB5	Opatija/Istra aquifer aquifer	,	2			Stremtal aquifer Groundwaterbody Hügelland RaabOst	0,	1
EB6 EB8	Notranjska Reka aquifer (part of Bistrica-Snežnik) Rijecina – Zvir aquifer	•	3 2			Pinkatal aquifer		1
EB9	Novokracine aquifer	Croatia, Slovenia	2			Pinkatal 2 aquifer	, ,	1
EB10	Cerknica/ Kupa aquifer,	,	2			Group of GWBs Günser Gebirge Umland Günstal aquifer	, ,	1 1, 3
EB11 EB12	Kocevje Goteniška gora aquifer, Radovica-Metlika/ Zumberak aquifer	,	2			Rabnitztal aquifer		1, 3
EB13	Ormoz-Sredisce ob Drava/Drava-Varazdin aq.		2			Group of GWBs Hügelland Rabnitz		1, 3
EB14	Bregana aquifer		2	<100		Heideboden [DUJ]	, ,	1
EB15	Bregana-Obrezje/Sava- Samobor	Croatia, Slovenia	2			Goricko, Mura–Zala basin/Radgona–Vaš, Kot aquifer CZ_GB_16410	Austria, Croatia, Hungary, Slovenia Austria, Czech Republic	1
EB16	Bizeljsko/ Sutla aquifer		2			CZ_GB_16520	·	1
EB17	Boc aquifer		2			Szigetköz, Hanság-Rábca/Podunajska basin, Zitny Ostrov	•	1
EB18 EB19	Rogaška aquifer Atomske toplice aquifer	•	2			Dunántúli középhegység északi rész/Komarnanska Vysoka	Hungary, Slovakia	1
EB20	Bohor aquifer		2			Kryha Komarnanska Vysoka Kryha / Dunántúli – középhegység	Hungary, Slovakia	1
EB21	Orlica aquifer		2	200		északi rész		
EB22 EB23	Dolinsko-Ravensko/ Mura aquifer Kupa aquifer	•	1, 2 2	200 2,000		as above	0 77	1
EB24	Pleševica/ Una aquifer		2	3,300		Ipoly völgy/ Alúvium Ipla aquifer Slovensky kras / Aggtelek aquifer		3 1, 3
EB25	Krka aquifer		2	3,800		Bodrog aquifer		1
EB26	Cetina aquifer		2	5,000		Siret	, , , , , , , , , , , , , , , , , , , ,	1
EB27 EB28	Neretva Right coast aquifer Trebišnjica/Neretva Left coast aquifer	.,	2	2,700 1,100		Dniester Pripyat		1 1, 2
EB29	Dinaric Littoral (West Coast aquifer)		2	400		Paleogene-Neogene terrigenous aquifer	•	1, 2
EB30	Bileko Lake aquifer		2	1,600	EU88	Cenomanian terrigenous aquifer	Belarus, Ukraine	1, 2
EB31 EB32	Posavina I/ Sava aquifer Srem-West Srem/ Sava aquifer	.,	2 1	400 2,200	EU89	Upper Preterozoic terrigenous aquifer		1, 3
EB33	South Western Backa/Dunav aquifer		1	600		Bug aquifer	•	1, 2
EB34	Mura aquifer		1			Alluvial Quaternary aquifer Paleogene-Neogene aquifer		1
EB35 EB36	Drava/ Drava West aquifer Baranja/Drava East		1			Oxfordian-Cenomanian aquifer	Belarus, Poland, Ukraine	1
EB37	Danube-Tisza-interflowe/Backa aquifer		1	5,600		Cenomanian carbonate-terrigenous aquifer	Belarus, Lithuania, Poland, Russia	
EB38	(Northeast) Backa/Danube -Tisza Interfluve	Croatia, Hungary, Romania, Serbia	1	17,600		Aquifers in Quaternary deposits Oxfordian-cenomanian carbonate-terrigenous aquifer	Belarus, Lithuania, Poland, Russia Belarus, Lithuania, Poland, Russia	
EB39 EB40	Upper Pleistocenesomes alluvial fan	0. 11	1	11,300	EU97	Mazursko-Podlashi region aquifer	Belarus, Lithuania, Poland, Russia	
EB40 EB41	Pleist-Hol. Mures/Maros alluvial fan aquifer Körös-valley, Sárrét, shallow/Crisuri aquifer		1 1	6,900 12,600		Upper Cretaceous aquifer	Belarus, Lithuania, Poland, Russia	
EB42	Körös – Crisuri holocene	Hungary, Romania	1			Daugava Middle-Lower-Devonian GWB (D2-1)	Latvia, Belarus, Lithuania, Russia Latvia, Lithuania	1
EB43	Hortobágy-Nagykunság Bihar Northern Part		1	1 000	EU101	GWB D4/ Upper Devonian Stipinai LT002003400		1
EB44 EB45	Skadar/Shkoder Lake, Dinaric east coast aquifer N and S Banat or N and Mid Banat aquifer		2 1, 3	1,800 21,700		Upper – Middle Devonian LT001003400		1
EB46	Nyírség, keleti rész / Nyírség, east margin aquifer		1, 3	3,900		D10/Polotsk & Lansky terrigen. complex of M- U Devonian aq GWB D8		1
EB47	Somes/Szamos alluvial fan aquifer	Hungary, Romania, Ukraine	1	4,100		GWB D6		1
EB48	Macva-Semberija aquifer	., ., ., .,	1	1,300 1,700		GWB D5	,	1
EB49 EB50	Tara Massif Lim aquifer	., .,	2	1,700 1,200		Upper Devonian terrigenous-carbonate aquifer		1
EB51	Pester aquifer		2	1,100		Ordovician-Cambrian GWB Cambrian-Vendian Voronka GWB	Estonia, Russia Estonia, Russia	1
EB52	Metohija aquifer		2	200		D9/Upper Devonian terrigenous-carbonate complex aq,		1
EB53	Beli Drim/Drini Bardhe aquifer		2	4,000		Cenomanian aq		_
EB54 EB55	Tetovo-Gostivar Korab/Bistra – Stogovo aquifer	,	2	600 400	EU111	Hanna Davinian taminana ya nahanata anyifan	,	1
EB56	Jablanica/Golobordo aquifer		2	900	EU112	Upper Devonian terrigenous-carbonate aquifer		1
EB57	Prespa and Ohrid Lake aquifer		2	1,500		GWB D4/ Upper Devonian Stipinai LT002003400		1
EB58 EB59	SYSTIMA TRIKLARIOU KASTORIAS Mourgana Mountain/ Mali Gjere aquifer		2	400 500		GWB F3		1
EB60	SYSTIMA POGONIANIS	,	2	500		Aquifer F2/Permian-Upper Devonian Aquifer F1/Permian-Upper Devonian		1
EB61	Nemechka/Vjosa-Pogoni aquifer	Albania, Greece	2	1,800		Upper-Devonian GWB (D3)		1
EB62	Pelagonia- Florina/Bitolsko aquifer	,	2	1,200		Quaternary sediment aquifer		1
EB63 EB64	Systima Axiou aq Systima Axiou GWB		2	1,700 1,700		Upper Devonian terrigenous-carbonate aquifer Ordovician Ida-Viru GWB		1
EB65	Systima Doiranis aq		2	400		Ordovician Ida-Viru GWB Ordovician Ida-Viru oil-shale basin GWB		1
EB66	Systima Doiranis GWB	,	2	200	EU123	Kanunkankaat aquifer	Finland, Russia	3
EB67 EB68	Sandansky-Petrich aquifer Sandansky valley aquifer	8,,	2			Aquifer Anarjokka Karasjok aquifer		3
EB69	Petrich valley aquifer		2			Levajok-Valjok aquifer		3
EB70	FYROM-Central Serbia		2	2,000		Tana Nord		3
EB71	FYROM-SW Serbia	,,	2	2,800		Neiden aquifer	, ,	3
EB72 EB73	Zemen Stara Planina/ Salasha Montana aquifer	0,	2	1,000 400		Pasvikeskeren aquifer Grense Jakobselv aquifer		3
EB74	As above		1	4,000		Abbotsford-Sumas		1
EB75	Miroc & Golubac	,	3	700		Okanagan-Osoyoos	•	3
EB76 EB77	Dacian basin Orvilos-Agistros/Gotze Delchev aquifer		1, 3 2	2,200 700		Grand Forks Poplar	,	3
EB78	Nastan-Trigrad		2	700		Estevan	,,	2
EB79	Smolyan	Bulgaria, Greece	2	900		Northern Great Plains		1, 2, 3
EB80	Rudozem	0,	2	400		Châteauguay	,	2
EB81 EB82	Erma Reka Evros/Meric		2	300 2,400		San Diego-Tijuana Cuenca Baja del Río Colorado	,	3 1
EB83	Orestiadas System	Bulgaria, Greece, Turkey	2	900	10N	Sonoyta-Pápagos	Mexico, United States	1
EB84	Orestiada/Svilengrad-Stambolo/Edirne aquifer	0,	2	1,000		Nogales Sanra Cruz	,	1
EB85 EB86	Topolovgrad Massif aquifer Malko Tarnovo kasrt waterbearing massif	8	2	1,300 900		San Pedro	,	1
EB87	Dobrudja/Dobrogea Neogene – Sarmatian aq		1	26,000		Conejos Médanos-Bolsón de la Mesilla	Mexico, United States	1
EB88	Dobrudja/Dobrogea aquifer	Bulgaria, Romania	1	40,600		Bolsón del Hueco-Valle de Juárez	,	1
EB89	Danube-Prut	,	1	15,500		Edwards-Trinity-El Burro Cuenca Baja del Río Bravo / Grande		2, 3 1
EB90 EB91	Middle Sarmantian Pontian aquifer Prut	,	1	24,800 4,900		Soconusco-Suchiate/Coatán	,	1, 2
EU1	LOW MIÑO		3	200		Chicomuselo-Selequa/Cuilco		2, 3
EU2	IE_NW_G_082	0	3	2,000		Ocosingo-Usumacinta-Pocóm-Ixcán Márquez de Comillas-Chixoy/Xaclbal		2 2, 3
EU3 EU4	IEGBNI_NW_G_048 IE_NW_G_082		3 2	4,900 200		Boca del Cerro-San Pedro		1, 2
EU5	IEGBNI_NW_G_028		2	3,300	6C	La Trinitaria-Nentón	Guatemala, Mexico	2
EU6	IEGBNI_NW_G_050	Ireland, United Kingdom	3	800		Península de Yucatán-Candelaria-Hondo Mopán-Belice		1, 2 2
EU7 EU8	IEGBNI_NB_G_007 CIUDAD RODRIGO	0	3	2,700 500		Pusila-Moho	,	2
EU9	Moraleja aquifer		3	300		Sarstún		2
EU10	VEGAS BAJAS	Portugal, Spain	3	700		Temash Motagua		2 1, 2, 3
EU11 FU12	Dom. plissé Pyrénées axiales et alluvions IVair	, , . , . , . , . , . , .	3	600 14 200		Chiquimula - Copán Ruinas		2, 3
EU12 EU13	Sables du Landien des Flandres Sables du Landien d'Orchies	0 . , ,	1 1, 3	14,200 6,800		Esquipulas-Ocotepeque-Citala	, ,	2
EU14	cvs_0160_gwl_1	Belgium, France, Netherlands	1	3,000		Ostua-Metapan Río Paz	,	2
EU15	Zout grondwater in ondiepe zandlagen	0 . ,	1	4,600 1,000	17C	Estero Real Río Negro	Honduras, Nicaragua	1
EU16 EU17	Calcaires de l'Avesnois Socle du Brabant		3 1, 3	1,000 2,700		Sixaola	Costa Rica, Panama	1
EU18	cks_0200_gwl_1		1, 3	7,800		Masacre Artibonito		3
EU19	Grès du Lias inférieur d'Hettange Luxembourg		1	2,300		Los Lagos		2
EU20	Calcaires et marnes jurassiques chaîne du Jura		2	5,100	4CB	Pedernales	Dominican Republic, Haiti	2
EU21 EU22	Grès vosgien captif non minéralisé Calcaires Juras. chaîne du Jura - BV Doubs et	France, Germany France, Switzerland	1 2, 3	12,000 6,600		El Choco-Darién		3
EU22 EU23	Calcaires Juras. chaine du Jura - BV Doubs et Calcaires Juras. sous couverture du Pays de G		2, 3	6,600 1,600		Tachira Pamplonita La Guajira	•	2 1, 2
EU24	Genevese aquifer	France, Switzerland	2	<100		Grupo Roraima		3
EU25	Calcaires jurassiques BV de la Jougnena et Orbe	France, Switzerland	2	<100	5S	Boa Vista-Serra de Tucano-North Savanna	Brazil, Guyana	3
EU26 EU27	Grès du Trias inférieur du bassin houiller Domaine plissé BV Cenise et Pô	France, Germany France, Italy	1	300 200		Zanderij	French Guiana, Guyana, Suriname	1 1
EU27	Grès vosgien en partie libre		1	3,700		Coesewijne A-Sand/B-Sand		1
EU29	Domaine plissé BV Roya, Bévéra	France, Italy	2, 3	800		Costeiro	•	1
EU30	DE_GB_3_03	Germany, Netherlands	1, 2	20,600	10S	Tulcán-Ipiales	Colombia, Ecuador	3
EU31	Pliocène de Haguenau et nappe d'Alsace	, ,,	1	4,600		Zarumilla		3
EU32	DE_GB_Ei22	,	1	200		Puyango-Tumbes-Chira-Catamayo		2, 3
EU33	DE_GB_Ei23	, ,	1	200		Amazonas Titicaca		1, 3 2
EU34 EU35	Wiedau aquifer Deep GWB – thermal water	,	1, 3	1,900 8,400		Pantanal	, ,	1, 3
EU35	Fleons-Cimon		2	100		Agua Dulce		1
EU37	Massicci carbonatici della catena paleocarnica 1	. ,	2	<100		Ollagüe-Pastos Grandes	- ·	2
EU38	Catena paleocarnica centrale		2	100	185	Concordia/Escritos-Caplina	Chile, Peru	2
EU39	Massicci carbonatici della catena paleocarnica 2	,,	2	<100	19\$	Aquidauana-Aquidabán	Brazil, Paraguay	1
EU40	Kobariški stol aquifer	**	2	300		Caiuá-Bauru-Acaray		1
EU41 EU42	Catena paleocarnica orientale - Val Canale Cividalese	. ,	2 1, 2	200 600		Guaraní Serra Geral	Argentina, Br., Paraguay, Uruguay Argentina, Br., Paraguay, Uruguay	
EU43	Canin	Italy, Slovenia	2	<100		Literáneo-Chuy		1
EU44	Massicci carbonatici della catena paleocarnica 3	Austria, Italy	2	<100	24S	Permo-Carbonifero		1
EU45	Flysch goriziano		1, 2	<100		Litoral Cretácico	0 , 0 ,	1
EU46 EU47	Alta pianura isontina		1, 2	200 <100		Salto-Salto Chico		2
EU47 EU48	Vrtojbensko polje aquifer Rabeljski rudnik aquifer	Italy, Slovenia Italy, Slovenia	2	<100 100		Puneños Yrendá-Toba-Tarijeño		2, 3 1, 2, 3
EU49	Gail		2	<100		El Cóndor-Cañadon del Cóndor		1, 2, 3
-	dali							
	Call							
	Gan				_			_

Type¹ Area [km

2, 3 40,300

1, 2, 3 230,700

59,800

Label Aquifer name

EU51 Brestovica GWB

EU52 Flysch triestino

EU54 Osp-Boljunec GWB

EU50 Carso classico (isontino e triestin

Sharing countries

Italy, Slovenia

Italy, Slovenia

Italy, Slovenia

Italy, Slovenia

4,020,400

218,500

55,600

uay, Uruguay 1, 2, 3 1,793,700

1, 2, 3 452,800

Sharing countrie

Burma, China

Burma, Thailand

Bangladesh, Bhutan, Burma, India