

**Metadata Sheet: Legal Framework
(Indicator No. 10)**

Title:	Legal Framework
Indicator Number:	10
Thematic Group:	Governance
Rationale:	<p><i>This indicator, indicator 10 - Legal Framework - is based on the assumption that the governance of a transboundary basin is guided by (amongst other things) the legal agreements in place and that they provide a framework for the allocation of resources for different uses between States. Principles of international water law have been defined to guide dialogue among riparians for creating effective transboundary water resources management. This assessment maps the presence of widely recognised key international legal principles in transboundary treaties of which countries (i.e. the respective Basin Country Units) are part of, to determine the extent to which the legal framework of the basin is guided by these principles.</i></p> <p><i>By focusing on the transboundary legal framework, this indicator complements the Enabling environment (11) indicator (which considers the development of the 'enabling environment' for water resources management in each riparian country, based on a broad spectrum of issues including the policy, planning and legal frameworks, governance and institutional frameworks, and management instruments) and the Hydropolitical Tension indicator (12) (which focuses on governance at the transboundary scale, mapping the existence of resolution mechanisms in transboundary treaties and mapping it against the hydrological variability of the basin).</i></p>
Interlinkages:	<i>GW (indication of the likelihood of sustainable abstraction levels from aquifers), Lakes (results likely to be similar for lakes overlapping with transboundary river basins), LMEs (may be overlap of jurisdictions between river basins and LMEs)</i>
Description:	<p>The overall aim of this indicator is to assess the degree of correspondence/alignment of existing international freshwater treaties (in basin) with key legal principles of international water law. <i>i.e. principle of equitable and reasonable utilization, principle of not causing significant harm, principle of environmental protection, principle of cooperation and information exchange, principle of notification, consultation or negotiation, principle of consultation and peaceful settlement of disputes</i> (ILC, 1996; ILC, 2004; McCaffrey, 2003)¹. These principles represent important customary and general principles of international law applicable to transboundary water resources management that are accepted globally and incorporated in modern international conventions, agreements and treaties, including the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (hereinafter referred to as the UNECE Water Convention) and the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses (hereinafter referred to as the UN WC Convention)^{2,3}. Since the UNECE Water Convention and the UN WC Convention incorporate</p>

¹ ILC. 1996. The Helsinki Rules on the Uses of the Waters of International Rivers. Report of the Committee on the Uses of the Waters of International Rivers. 52nd Committee of the International Law Association.;

ILC, 2004. The Berlin Rules on Water Resources. Berlin Conference – International Water Law.;

McCaffrey, 2003. The Law of International Watercourses. Oxford University Press (April 10, 2003).

Consideration to environmental protection is not always listed as a key principle of international water law, but is included in both the Helsinki Rules on the Uses of the Waters of International Rivers (ILA, 1996) and the Berlin Rules on Water Resources (ILA, 2004) and has since become part of customary international water law. After consultations held at the UNECE 2nd Workshop “River basin commissions and other joint bodies for transboundary water cooperation: technical aspects” (May 2014) it was determined that environmental protection represents an important stand-alone principle and that it should be considered in this assessment.

² Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 17 Mar. 1992 (in force 6 Oct. 1996), *reprinted in* 31 I.L.M. 1312 (1992) (“ECE Convention”).

³ United Nations Convention on the Law of Non-Navigational Uses of International Watercourses, UN Doc. A/51/869, 21 May 1997, *reprinted in* 36 Int’l Legal Mat’ls 700.

	<p>all the above-mentioned principles and are both global in scope⁴, the countries' ratification of these two Global Water Conventions have also been taken into consideration as part of this assessment.</p>
<p>Metrics:</p>	<p>Data on the existence of key legal principles were drawn from the International Freshwater Treaties Database that is part of the Transboundary Freshwater Dispute Database (TFDD) at Oregon State University (hereinafter referred to as the "TFDD treaty database"). The TFDD treaty database includes information on a total of 686 international freshwater treaties and represents the most comprehensive and updated data source of transboundary freshwater treaties worldwide. The agreements in the data base relate to international freshwater resources, where the concern is water as a scarce or consumable resource, a quantity to be managed, or an ecosystem to be improved or maintained. Documents concerning navigation rights and tariffs, division of fishing rights, and delineation of rivers as borders or other territorial concerns are not included, unless freshwater as a resource is also mentioned in the document, or physical changes are being made that may impact the hydrology of the river system (e.g., dredging of river bed to improve navigation, straightening of a river's course). In large part, the documents in the database concern: water rights, water allocation, water pollution, principles for equitably addressing water needs, hydropower/reservoir/flood control development, and environmental issues and the rights of riverine ecological systems.</p> <p>Out of the 686 listed international freshwater treaties, 481 were assessed. The remaining treaties were considered and deemed not relevant for this assessment (more detailed information on this can be found under "interpretation of the information in the TFDD treaty database" below). Information on the presence of all identified key principles was readily available in the TFDD treaty database with the exception of the "no harm principle". This principle was therefore defined (for more information, see "defining the no harm principle" below) and all relevant treaties in the database (where the treaty text could be accessed) were assessed to determine its presence.</p> <p>Following resources have been used to define and select the key legal principles of international water law listed above:</p> <ul style="list-style-type: none"> - Rieu-Clarke 2004. A Fresh Approach to International Law in the Field of Sustainable Development –What Lessons from the Law of International Watercourses⁵. Convention on the Law of the Non-navigational Uses of International Watercourses⁶. - Berlin Rules: International Law Association Berlin Conference (2004) Water Resources Law⁷ - 1966 International Law Association Helsinki Rule on the Uses of the Waters of International Rivers⁸ - 1992 Convention on the protection and use of transboundary watercourses and international lakes⁹ - Expert advice, from Dr. Alistair Rieu Clark, Reader in International Law at the

⁴ The amendment to the UNECE Water Convention allowing membership from non-UNECE member states has entered into force, but will only become operation once it has been ratified by Ukraine, Belgium and Kazakhstan - this is expected to happen within the next few months.

⁵ Rieu-Clarke A. 2004 A Fresh Approach to International Law in the Field of Sustainable Development –What Lessons from the Law of International Watercourses. Available at [http://discovery.dundee.ac.uk/portal/en/theses/a-fresh-approach-to-international-law-in-the-field-of-sustainable-development\(9d84d8f5-7439-4ed9-9b18-f86bc9f3e95c\).html](http://discovery.dundee.ac.uk/portal/en/theses/a-fresh-approach-to-international-law-in-the-field-of-sustainable-development(9d84d8f5-7439-4ed9-9b18-f86bc9f3e95c).html), last accessed 20140613

⁶ Supra note 2

⁷ International Law Association Berlin Conference (2004) Water Resources Law, available at http://internationalwaterlaw.org/documents/intldocs/ILA_Berlin_Rules-2004.pdf, last accessed 20140613

⁸ Helsinki Rules on the Uses of the Waters of International Rivers, adopted by the ILA at the 52nd Conference, Helsinki, Finland, Aug. 1966, available at: http://www.internationalwaterlaw.org/documents/intldocs/helsinki_rules.html, last accessed 20140613

⁹ Supra note 2

UNESCO Center for Water Law and Policy ¹⁰																																								
Computation:	<p>The calculation of the basin scores were undertaken in two steps, after which results were categorized.</p> <p>Step 1:</p> <ul style="list-style-type: none"> A Basin Country Unit (BCU) receives a score of one for each of the key principles of international water law that are present in any of the transboundary freshwater treaties it has signed. The maximum score per BCU per principle is one, even if several treaties contain the principle in question. A value of 0 indicates that the presence of the principle in question in any treaty signed by the BCU could not be verified through the data available for this assessment. Each BCU that has signed either of the key global water conventions (UN WC Convention or the UNECE Water Convention) receives a score of one <p><i>Overview: Calculation of the BCU treaty score (for each BCU)</i></p> <table border="1"> <thead> <tr> <th>BCU (basin country unit) assessment criteria</th> <th>Possible value</th> </tr> </thead> <tbody> <tr> <td>At least one treaty covering principle of equitable and reasonable utilization</td> <td>0/1</td> </tr> <tr> <td>At least one treaty covering obligation not to cause significant harm</td> <td>0/1</td> </tr> <tr> <td>At least one treaty covering the principle on environmental protection</td> <td>0/1</td> </tr> <tr> <td>At least one treaty covering the principle on cooperation and information exchange</td> <td>0/1</td> </tr> <tr> <td>At least one treaty covering the principle on notification, consultation or negotiation</td> <td>0/1</td> </tr> <tr> <td>At least one treaty covering consultation and peaceful settlement of disputes</td> <td>0/1</td> </tr> <tr> <td>BCU has ratified UN WC Convention and/or UNECE Water Convention</td> <td>0/1</td> </tr> <tr> <td>BCU treaty score</td> <td>0 to 7</td> </tr> </tbody> </table> <p>STEP 2:</p> <p>To calculate a basin legal framework score the follow steps has been taken.</p> <ul style="list-style-type: none"> The above BCU score is weighted based on an average of the relative area and population in the BCU compared to the basin. Each weighted BCU score is summed up to a basin treaty score between 1-7. The basin treaty scores have been calculated according to the table below. <p><i>Calculation of the basin treaty score (for each basin)</i></p> <table border="1"> <thead> <tr> <th>BCUs in Basin</th> <th>BCU treaty score (from above)</th> <th>BCU weight</th> <th>Weighted BCU score</th> </tr> </thead> <tbody> <tr> <td>BCU1</td> <td>0 to 7</td> <td>up to 1</td> <td rowspan="4">BCU treaty score * BCU relative importance = weighted BCU score</td> </tr> <tr> <td>BCU2</td> <td>0 to 7</td> <td>up to 1</td> </tr> <tr> <td>BCU3</td> <td>0 to 7</td> <td>up to 1</td> </tr> <tr> <td>BCU4</td> <td>0 to 7</td> <td>up to 1</td> </tr> <tr> <td></td> <td></td> <td>Sum of all BCU weights in Basin = 1</td> <td>Basin treaty score = Sum of all weighted BCU scores (0 to 7)</td> </tr> </tbody> </table>	BCU (basin country unit) assessment criteria	Possible value	At least one treaty covering principle of equitable and reasonable utilization	0/1	At least one treaty covering obligation not to cause significant harm	0/1	At least one treaty covering the principle on environmental protection	0/1	At least one treaty covering the principle on cooperation and information exchange	0/1	At least one treaty covering the principle on notification, consultation or negotiation	0/1	At least one treaty covering consultation and peaceful settlement of disputes	0/1	BCU has ratified UN WC Convention and/or UNECE Water Convention	0/1	BCU treaty score	0 to 7	BCUs in Basin	BCU treaty score (from above)	BCU weight	Weighted BCU score	BCU1	0 to 7	up to 1	BCU treaty score * BCU relative importance = weighted BCU score	BCU2	0 to 7	up to 1	BCU3	0 to 7	up to 1	BCU4	0 to 7	up to 1			Sum of all BCU weights in Basin = 1	Basin treaty score = Sum of all weighted BCU scores (0 to 7)
	BCU (basin country unit) assessment criteria	Possible value																																						
	At least one treaty covering principle of equitable and reasonable utilization	0/1																																						
	At least one treaty covering obligation not to cause significant harm	0/1																																						
	At least one treaty covering the principle on environmental protection	0/1																																						
	At least one treaty covering the principle on cooperation and information exchange	0/1																																						
	At least one treaty covering the principle on notification, consultation or negotiation	0/1																																						
	At least one treaty covering consultation and peaceful settlement of disputes	0/1																																						
	BCU has ratified UN WC Convention and/or UNECE Water Convention	0/1																																						
	BCU treaty score	0 to 7																																						
BCUs in Basin	BCU treaty score (from above)	BCU weight	Weighted BCU score																																					
BCU1	0 to 7	up to 1	BCU treaty score * BCU relative importance = weighted BCU score																																					
BCU2	0 to 7	up to 1																																						
BCU3	0 to 7	up to 1																																						
BCU4	0 to 7	up to 1																																						
		Sum of all BCU weights in Basin = 1	Basin treaty score = Sum of all weighted BCU scores (0 to 7)																																					

¹⁰ <http://www.dundee.ac.uk/water/staff/staff/alistairrieu-clarke/>

Interpretation of the information in the “TFDD treaty database”:

This assessment relies on the availability of information on treaties in the TFDD treaty database ¹¹, including its indication on the presence of five out of six key principles indicated above.

Treaties falling under types 4, 5, 6, 7, 8, 10 and 11 in column G (Type) of the TFDD treaty database have been included in this assessment, while treaties following under categories 1, 2, 3 and 9 (for description of types, see footnote¹²) have been excluded as they were not deemed relevant in relation to the legal framework of basins.

For the five principles where the TFDD treaty database provides a value, the resulting score of this assessment was determined as follows:

	Equitable and reasonable utilization	Environmental protection	Principle of cooperation and information exchange	Principle of notification, consultation or negotiation, consultation	Peaceful settlement of disputes																																		
TFDD column	AP (equity or sustainability)	V (environment)	BY (information exchange)	W (prior notification)	Z (conflict resolution)																																		
Score ¹³	<table border="1"> <thead> <tr> <th>TFDD</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>1</td> </tr> <tr> <td>N,N.A</td> <td>0</td> </tr> </tbody> </table>	TFDD	Result	Y	1	N,N.A	0	<table border="1"> <thead> <tr> <th>TFD</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td><u>D</u></td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> </tr> <tr> <td>-1</td> <td></td> </tr> </tbody> </table>	TFD	Result	<u>D</u>	1	1	0	-1		<table border="1"> <thead> <tr> <th>TFDD</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>1</td> </tr> <tr> <td>N,N.A</td> <td>0</td> </tr> </tbody> </table>	TFDD	Result	Y	1	N,N.A	0	<table border="1"> <thead> <tr> <th>TFD</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td><u>D</u></td> <td>1</td> </tr> <tr> <td>2,3,4</td> <td>0</td> </tr> <tr> <td>0, 1</td> <td></td> </tr> </tbody> </table>	TFD	Result	<u>D</u>	1	2,3,4	0	0, 1		<table border="1"> <thead> <tr> <th>TFDD</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>1,2,3,4,5</td> <td>1</td> </tr> <tr> <td>0,-1</td> <td>0</td> </tr> </tbody> </table>	TFDD	Result	1,2,3,4,5	1	0,-1	0
TFDD	Result																																						
Y	1																																						
N,N.A	0																																						
TFD	Result																																						
<u>D</u>	1																																						
1	0																																						
-1																																							
TFDD	Result																																						
Y	1																																						
N,N.A	0																																						
TFD	Result																																						
<u>D</u>	1																																						
2,3,4	0																																						
0, 1																																							
TFDD	Result																																						
1,2,3,4,5	1																																						
0,-1	0																																						

Defining the “no harm principle”

Information on the presence of the “obligation not to cause significant harm” was not available in the TFDD treaty database and had to be assessed separately. The principle was defined to facilitate consistent assessment over its presence or non-presence in transboundary freshwater treaties. See below definition used:

“The obligation not to cause significant harm also forms part of the theory of limited

¹¹ File used: Treaty_Database_Final_07-23-09_for SIWI.xls and Treaty Database Design (with Descriptions)_.for SIWI.doc

¹² 1 – Not a treaty: The document is not a treaty signed by the respective parties

2 - Semi-international treaty: The treaty has not been concluded between sovereign states, for example an agreement between one state and an international organization or an agreement between a provincial government and a state.

3 – Does not fit TFDD inclusion criteria: the treaty does not deal with water as a consumable resource

4 - Primary Agreement: The first water treaty signed between the parties about a particular issue area.

5 - Replacement of a Primary Agreement: Replaces a previously signed water agreement on the same issue area.

6 - Amendment to a Primary Agreement: Amends parts of a previously signed water agreement on the same issue area

7 - Protocol to a primary agreement: A treaty adding further aspects to an already signed water treaty and potentially modifying parts of the original treaty

8 - Financial agreement related to international waters: A treaty dealing exclusively with the financing of particular aspects related to water management, not with water itself (and thus not part of core TFDD collection)

9 - Missing

10 - Available but not translated to English

11 - Available but not coded

	<p><i>territorial sovereignty and with this principle no state in an international drainage basin is allowed to use the watercourses in their territory in a way that would cause significant harm to other basin states or their environment. Some treaties link the no significant harm rule to equitable and reasonable utilization in the sense that some significant harm may be permitted if it is deemed equitable and reasonable. In this assessment the this would include:</i></p> <ul style="list-style-type: none"> • <i>When a treaty specifically refers to no transboundary harm, i.e. a parties responsibility not to cause harm/damage/cause negative effects on the other parties.</i> • <i>No harm could both refer to impacts of activities in a broader sense or to impacts of specific activities (as in the context of issue-specific treaties/agreements)</i> • <i>Any reference to no (zero) harm as well as no significant harm”</i> <p>All treaties of types 4, 5, 6, 7, 8, 10 and 11 listed in the TFDD treaty database (where the treaty text could be accessed¹⁴) were assessed to determine its presence. Interpreting International water law can however be difficult and for this exercise, with the magnitude of treaties, it was not possible to do a full legal analysis of cases where it was uncertain if a treaty really included the “obligation not to cause significant harm” even using above-mentioned definition. International lawyers were consulted to guide in such cases . If a treaty’s consideration to the “obligation not to cause significant harm” would still remain uncertain after this process a decision of rather considering the principle included in that treaty than not in was practiced.</p>
Units:	Unitless
Risk categorization	<p>A relative risk category score was developed with scores between 1 and 5, where 1 is indicating a high presence of key principles of international water law in the legal framework of the basin (very low relative risk) and 5 a low presence of key principles (very high relative risk). The legal framework would include the existing basin treaties and the basin countries’ ratification or signing of the global water conventions (UN WC and/or UNECE Water Convention).The interpretation of the relative risk categories for this indicator is following:</p> <p>Relative Risk Category 1: Practically all assessed international principles are present in the existing basin treaties and the majority of basin countries have ratified or signed the UNWC Convention and/or the UNECE Water Convention. The basin legal framework is guided by key principles of international water law to a very strong degree.</p> <p>Relative Risk Category 2: The majority of the assessed international principles are present in the legal framework of the basin. The basin legal framework is guided by key principles of international water law to a strong degree.</p> <p>Relative Risk Category 3: Some of the assessed international principles are present in the legal framework of the basin. The basin legal framework is guided by key principles of international water law to a medium degree.</p> <p>Relative Risk Category 4: A limited number of the assessed international principles are present in the legal framework of the basin. The basin legal framework is guided by key principles of international water law to a limited degree.</p> <p>Relative Risk Category 5: Practically none of the principles are present in the legal framework of the basin. The basin legal framework in the basin is not guided by key principles of international water law.</p> <p>Given this is the first time such an assessment has been undertaken at the global level, the</p>

¹⁴ 85 out of 481 treaties could not be found, hence generating some uncertainty for the lower categories (4 & 5), see “Limitations”.

category ranges are determined to suit the particular needs of this assessment. They are defined in a way as to highlight those basins where practically all or practically none of the principles are present in the legal framework (through defining very narrow ranges for the categories 1 and 5) and with a fairly even distribution between the low, moderate and high ranges.

Table below summaries the results of the Legal framework indicator assessment:

Relative risk category	Range (original score)	No. of Basins	Proportion of Basins	No. of BCUs	Proportion of BCUs
1 - Very low	6.8 - 7	8 (0*)	3%	42 (0*)	5%
2 - Low	4.5 – 6.79	51 (3*)	18%	160 (0*)	20%
3 - Moderate	2.5 – 4.49	56 (3*)	20%	144 (7*)	18%
4 - High	0.2 – 2.49	63 (1*)	22%	125 (4*)	16%
5 - Very high	0 – 0.19	108 (2*)	37%	321 (1*)	41%

* Number of basins/BCUs for which results have been calculated, but bear a lower level of confidence due to data limitations (See more in Limitations section).

Limitations

- Results for some of the basins/BCUs are considered to have lower levels of confidence. This is the case where: a) certain treaties are not considered valid by all basin states; b) there is no or very limited information available for a BCU (like in the cases of South Sudan and Palestine); and c) the presence of the key principle not assessed in the TFDD database (not to cause significant harm) could not be verified for one or more BCUs in the basin either due to ambiguous formulation in the treaty or difficulty in arranging translation of a treaty language not familiar to the assessment team. These basins and BCUs are marked as having lower level of confidence in the results sheets downloadable from the TWAP RB data portal.
- The assessment does not measure performance of the cooperation in a certain basin, the implementation of the treaties or the application of the principles in question, it only provides an assessment of the legal governance framework in place.
- The method is designed to primarily compare the legal framework in place at basin level, while still recognizing the value of any ratification of the two global water conventions by riparian states. As a result, “basin treaties” are of higher relative importance to the final BCU or basin score (generating a score between 0-6 depending on how many key principles are included in such treaties) than the countries’ ratification of the two global conventions (generating a maximum score of 1). This needs to be considered when interpreting the results.
- The assessment relies to a large extent on the information in the TFDD treaty database. The TFDD treaty database is considered the most comprehensive existing global data source for transboundary freshwater agreements. However, it has been outside the scope of this assessment to verify the extent of comprehensiveness or correctness of the TFDD treaty database. It is acknowledged that relevant treaties, or principles within treaties, may exist that have been overlooked by this assessment. As an example, the TFDD treaty database was latest updated in 2009 so the assessment does not take into consideration treaties that may have been signed in recent years.
- A score 0 in the methodology indicates that the principle could not be verified, in some cases because of lack of information. Thus the degree of score confidence for the “lower” ratings (relative risk categories 4-5) can be seen as slightly lower than that of

	<p>the “higher” ratings (relative risk categories 1-3)</p> <ul style="list-style-type: none"> • The method does not take into account the jurisdiction and scope of the agreement. The method does however weigh the relative importance of a treaty based on each of the signatories’ significance to the basin. Some treaties incorporating key principles may concern only a limited technical scope, such as the construction of a dam or similar, and not the entirety of cooperation in that basin. The method does not factor in such limited “technical scope” – such treaties are dealt with in the same way as more “overarching” treaties. Treaties of limited technical scope are however often only signed by a few countries and not by all countries in a basin. • The method does not take into consideration if the principles above have been covered by the BCUs’ ratification of the same, or of several different treaties (same score for one or several treaties). An assessment focusing primarily on the “main basin treaties” and excluding treaties of limited “technical scope” may paint a slightly different picture. • Taking above limitations into consideration, this assessment provides a good overview and possible comparison on a broader scale between regions and basins with regards to the legal framework in place. However, the information generated should not be interpreted in “absolute terms” with regard to specific BCUs or basins. <p>Potential for future development</p> <ul style="list-style-type: none"> • A repeated assessment should cover agreements signed after 2007. • The results from this indicator should be read together with the results from the two other indicators on enabling environment and hydropolitical tension in order to provide a more comprehensive picture of the risks associated with governance in basins. • This indicator has considered all relevant treaties, also those of limited technical scope. Even though this could be seen as providing a more comprehensive view of the legal frameworks in place, an assessment focusing primarily on the “main basin treaties” may paint a slightly different picture. • A repeated assessment can be combined with a thorough and extended analysis of the legal framework in place for selected basins in the different categories. Such an in-depth analysis should also include consideration to implementation/compliance and effectiveness of the legal framework.
Spatial Extent:	Global
Spatial Resolution:	BCUs and basins
Year of Publication:	2015
Time Period:	-
Additional Notes:	
Date:	16.02.2015
Format:	Excel sheet
File Name:	TWAP_RB_indicator_10_results.xlsx
Contact persons:	Anna Forslund, Birgitta Liss Lymer

**Contact
details:**

Anna.Forslund@siwi.org; Birgitta.Liss.Lymer@siwi.org