

**Water and Climate in Central Asia:  
From Conflict to Cooperation**

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From the shrinking of the Aral Sea to the tensions on the construction of hydroelectric dams in the Amu Darya and the Syr Darya rivers, Central Asia (CA) has witnessed one of the biggest human-induced environmental disasters of the 20<sup>th</sup> century and has been classified as one of the regions with the highest probability of water conflicts on Earth. To this, one needs to add that CA is considered a climate change security hotspot since climate change is expected to disrupt the region's water flow, agriculture yields, socio-economic-political stability and citizen's livelihood. The five CA states, Uzbekistan, Tajikistan, Kazakhstan, Kyrgyzstan and Turkmenistan, have not reached regional binding agreements on how to deal with these risks and transnational cooperation, although gradually increasing, is still weak. Thus, since 2009, the EU has established a Working Group on Environment and Climate Change, as part of its CA Strategy, aiming to foster cooperation and reach common solutions to water management and climate change issues. In view of the upcoming EU-CA High Level Conference in January 2019 and the new EU-CA strategy, this paper summarises the current situation and presents several recommendations on how the EU could have a greater impact in solving the most urgent water, environment and climate change related issues in CA.

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## **Introduction**

The shrinking of the Aral Sea marked the start of water management conflicts and environmental disasters in CA, making it one of the world's areas with the highest chance of future armed conflict over water resources.<sup>2</sup> Current phenomena such as climate change, economic growth, urbanisation and population increase are accelerating water stress in the region,<sup>3</sup> causing the issue to be of uttermost global importance. For this reason, during the 2009 EU-CA High Level Conference in Rome, the EU established the Platform for Environment and Water Cooperation. The goal of this EU-CA Working Group on Environment and Climate Change (WGECC) is to identify EU-CA regional cooperation priorities in environment and climate change, strengthen policy dialogue and cooperation, both at the regional level and between the EU and CA.<sup>4</sup> The latest meeting, held on the 7-8<sup>th</sup> June 2018 in Tashkent, reaffirmed the commitment to strengthen EU-CA cooperation, the adherence of both parties to the Sustainable Development Goals and the importance of the EU in CA.<sup>5</sup> In view of the future EU-CA High-Level Conference that has been scheduled for the last week of January 2019, this paper aims to provide an overview of the current situation and a few recommendations to improve the existing framework. Therefore, this paper will firstly present a brief overview of the Tragedy of the Commons which is destroying CA's environment. Secondly, it will argue that, due to climate change, sustainable and cooperative strategies need to be reached promptly in order to build a resilient environment. Thirdly, it will summarise the EU-CA Environment and Water Cooperation achievements. Finally, the last part of the paper will include some recommendations to both parties in view of the EU-CA High-Level Conference in 2019 and the new EU-CA strategy which will be drafted next year.

## **Water Mismanagement in CA: a Tragedy of the Commons**

Water mismanagement in CA can be dated back to the Soviet period when water resources and irrigation policies were centrally managed. The Soviet decision to extend irrigation roots for cotton production was detrimental for the Aral Sea, once the fourth largest lake on Earth, which saw its surface area decline from 68,000 km<sup>2</sup> in 1960 to 14,280 km<sup>2</sup> in

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<sup>2</sup> Zhupankhan, A., Tussupova, K. and Berndtsson, R. (2018). Water in Kazakhstan, a key in Central Asia water management, *Hydrological Sciences Journal*, 63 (5), pp. 752-762.

<sup>3</sup> Zhiltsov, S.S., et al. (2018) Transboundary Rivers in Central Asia: Cooperation and Conflicts Among Countries, *The Handbook of Environmental Chemistry*, pp.1-20.

<sup>4</sup>European External Action Service [EEAS]. (2018a). *EU- Central Asia environmental cooperation focuses on capacity building to facilitate green investments*. Retrieved from [https://eeas.europa.eu/delegations/uzbekistan/46106/eu---central-asia-environmental-cooperation-focuses-capacity-building-facilitate-green\\_en](https://eeas.europa.eu/delegations/uzbekistan/46106/eu---central-asia-environmental-cooperation-focuses-capacity-building-facilitate-green_en) [Accessed: 19 July 2018].

<sup>5</sup>WECOOP2. (2018). *8<sup>th</sup> Meeting of the Working Group on Environment and Climate Change*. Retrieved from <http://wecoop2.eu/sites/default/files/documents/8WGECC/Summary%20by%20the%20Chair%208th%20WGECC%20final%20IMELS%20EN%201207-6.pdf>.

2010, causing one of the planet's worst human-induced environmental disasters.<sup>6</sup> Other than the shrinking of the Aral Sea, the Soviet Union left another legacy in the region: the lack of transboundary river management laws.<sup>7</sup> Under the USSR, CA had in place a mutual dependency system where upstream regions supplied water to the downstream in return for energy. However, the collapse of the USSR and subsequently the independence of the Central Asian states created conflicts over the regional water resources, turning the region into a security hotspot.<sup>8</sup> Treaties, such as the Almaty agreement in 1992, which established the Interstate Commission for Water Coordination (ICWC), were signed by all five parties to recognise the importance of water resources' common management, however the rise of interstate tensions prevented the ICWC from setting clear rules on transboundary water use.<sup>9</sup> Furthermore, the USSR's focus on the short-term economic gains of enhanced cotton production, overlooking the negative externalities of intensive irrigation in the long-term, also left behind a profit-oriented mentality.<sup>10</sup> This short-term mentality and the lack of consideration for the negative environmental externalities is still present in CA today. Hence, Central Asian countries still fail to realise that prioritising national strategies to enhance short-term economic gains can lead to negative environmental externalities causing what Hardin defines a Tragedy of the Commons.<sup>11</sup>

After the collapse of the USSR, the main conflicts occurred between the upstream countries, Kyrgyzstan and Tajikistan, and the downstream ones, Kazakhstan, Turkmenistan and Uzbekistan, over the two major rivers of the region, the Amu Darya and the Syr Darya due to water and energy provision imbalances (see Figure 1). The former have high water availability, 75 per cent of the region's water resources, but low energy provision.<sup>12</sup> The latter are energy rich, water poor, and require high amounts of water for agriculture. To solve this imbalance, Central Asian states had a common electricity grid, the CA Power System (CAPS), which allowed energy distribution amongst the countries according to seasonal needs, demand and supply capabilities. However, in 2003, Turkmenistan, followed by Uzbekistan and Kazakhstan, withdrew from CAPS. Thus, upstream states were left with severe energy shortages and decided to enhance their hydropower capabilities to become self-sufficient, alleviate poverty and foster development. The response of the downstream countries, who claimed that these hydropower projects altered the water flow needed to sustain their agriculture and hence

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<sup>6</sup> Gaybullaev, B., Chen, S., and Gaybullaev, D. (2012). Changes in water volume of the Aral Sea after 1960, *Applied Water Science*, 2, pp. 285-291.

<sup>7</sup> Zhiltsov et al, *Transboundary Rivers in Central Asia: Cooperation and Conflicts Among Countries*, pp. 6-7.

<sup>8</sup> European Parliament. (2015). *Water Disputes in Central Asia: Rising tension threatens regional stability*. pp. 1-12. Retrieved from [http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS\\_BRI\(2015\)571303](http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2015)571303).

<sup>9</sup> Ibid, p. 2.

<sup>10</sup> Cai, X. et al. (2018). Understanding and managing the food-energy-water nexus – opportunities for water resources research, *Advances in Water Resources*, 111, pp. 259-273.

<sup>11</sup> Hardin, G. (1968). The tragedy of the commons, *Science*, 162 (3859), pp. 1243-1248.

<sup>12</sup> European Parliament, *Water Disputes in Central Asia: Rising tension threatens regional stability*, p. 4.

represented a threat to their national security, exacerbated tensions, confrontational approaches and reduced cooperation.<sup>13</sup>

Figure 1. Water Resources of the Aral Sea Basin<sup>14</sup>



Other than interstate disputes, there are other reasons for which the situation remained tense after the collapse of the USSR. Firstly, although many believe that water disputes in CA are due to water scarcity, the true problem is that there is an extremely high water consumption, mainly due to inefficient agricultural irrigation practices and old infrastructure.<sup>15</sup> The World Bank estimates that approximately 79 per cent of CA irrigated water is lost or evaporated before reaching the fields.<sup>16</sup> Moreover, in 2014, Turkmenistan was ranked one of the world's highest per capita water consumers, accounting for four times the consumption of a US citizen and thirteen times the one of a Chinese.<sup>17</sup> Uzbekistan, Kyrgyzstan, Tajikistan and Kazakhstan are classified fourth, fifth, seventh and

<sup>13</sup>European Parliament, *Water Disputes in Central Asia: Rising tension threatens regional stability*, p. 5.

<sup>14</sup> CAWaterinfo. (2018). *Aral Sea*. Retrieved from [http://www.cawater-info.net/aral/index\\_e.htm](http://www.cawater-info.net/aral/index_e.htm).

<sup>15</sup> Chikalova, L. (2016). Climate Change as a Political Threat Multiplier in Central Asia, *OSCE Academy*, 36, pp. 1-16.

<sup>16</sup> EEAS. (2018b). *EU action on water resources in Central Asia as a key element of environmental protection*. Retrieved from [https://eeas.europa.eu/sites/eeas/files/eu\\_action\\_on\\_water\\_resources\\_in\\_central\\_asia\\_0.pdf](https://eeas.europa.eu/sites/eeas/files/eu_action_on_water_resources_in_central_asia_0.pdf).

<sup>17</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 7.

eleventh, respectively, in the Earth's water wastage table.<sup>18</sup> Thus, it is estimated that, in Uzbekistan, a 1 per cent increase in water pumping efficiency would save USD 10 million per year.<sup>19</sup> This inefficiency is recognised by many actors, including the OECD, which claims that infrastructure improvements are needed before climate change further worsens the situation.<sup>20</sup>

Secondly, there are no holistic and shared agreements on transnational water sources. While bilateral agreements exist, regional ones are lacking.<sup>21</sup> In fact, the ones that have been signed at the regional level are either outdated, dating back to the 1990s, or have not been implemented.<sup>22</sup> Moreover, all existing treaties contain rather general statements and lack detailed guidelines on how to address water management disputes.<sup>23</sup> Thirdly, there are too many entities working on natural resources and water activity in CA which makes it difficult to have a clear understanding of who is responsible for what and to reach common agreements between all parties.<sup>24</sup>

Fourthly, interstate disputes over national projects are lasting decades undermining prospects for cooperation. For instance, the construction of the Rogun Dam in Tajikistan has deteriorated relations with Uzbekistan, who had fiercely opposed it under President Karimov claiming that it would negatively affect its national water irrigation systems.<sup>25</sup> Moreover, the Golden Lake project in the Karakum Desert in Turkmenistan, which uses water from the river Amu Daya, is not approved by the Uzbeks who fear that it will cause another environmental disaster.<sup>26</sup> Finally, new challenges, such as rising electricity demands, ageing power infrastructure, climate change, urbanisation and population growth, are likely to exacerbate the existing tensions.

In summary, mismanagement of water resources, protracted historical disputes, individual country's political claims, different power capabilities of CA's states and the upstream-

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<sup>18</sup> Ibid.

<sup>19</sup> European Institute for Asian Studies [EIAS]. (2017). *Central Asia: shared past and common future, cooperation for sustainable development and mutual prosperity*. Presentation delivered on the 10 November at the 13<sup>th</sup> EU-Central Asia Ministerial Meeting in Samarkand. Retrieved from [http://www.eias.org/wp-content/uploads/2016/03/Speech\\_Carlier\\_Uzbekistan\\_S\\_B\\_Final.pdf](http://www.eias.org/wp-content/uploads/2016/03/Speech_Carlier_Uzbekistan_S_B_Final.pdf).

<sup>20</sup> Organisation for Economic Cooperation and Development [OECD]. (2017). *Multi-purpose Water Infrastructure*. Retrieved from [https://www.oecd.org/env/outreach/MPWI\\_Perspectives\\_Final\\_WEB.pdf](https://www.oecd.org/env/outreach/MPWI_Perspectives_Final_WEB.pdf).

<sup>21</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 8.

<sup>22</sup> Janusz-Pawletta, B. (2015). Current legal challenges to institutional governance of transboundary water resources in Central Asia and joint management arrangements, *Environmental Earth Science*, 73, pp. 887-896.

<sup>23</sup> Zhupankhan et al, *Water in Kazakhstan, a key in Central Asia water management*, p. 758.

<sup>24</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 12.

<sup>25</sup> Ibid, p. 9.

<sup>26</sup> Ibid.

downstream dichotomy, classify CA as a hydro-political conflict region with a high likelihood of future (armed) conflict over water resources.<sup>27</sup>

## A New Political Environment and Climate Change

From 2012, when Uzbek President Islam Karimov declared that water wars could be imminent in CA, to March 2018 when Uzbek Foreign Minister Abdulaziz Kamilov announced that Tajikistan's Rogun hydropower dam could be completed, the situation seems to have drastically improved.<sup>28</sup> The death of President Karimov in 2016 and the establishment of the Mirziyoyev presidency appears to have changed the tone of Uzbek-Tajik relations and reduced the tensions in CA.<sup>29</sup> Nevertheless, although the political environment seems to have "changed its tone from confrontational to constructive",<sup>30</sup> the imminence of disruptive climate change requires cooperative actions to be taken immediately, at a pace which the current political environment cannot withstand. As Chikalova argues, rising temperatures are changing CA far too quickly and reforms are too slow to cope with these changes.<sup>31</sup>

According to the World Bank, CA is one of the most climate vulnerable regions of the world due to temperatures rising and melting glaciers.<sup>32</sup> In Turkmenistan, temperatures have increased by 0.6-0.8°C over the past 50 years, in Kazakhstan and Uzbekistan by 0.8-1.3°C over 100 years and in Kyrgyzstan and Tajikistan by 0.3-1.2°C.<sup>33</sup> The consequences of this will be the diminishing of agricultural yields and melting glaciers. Regarding the former, it is estimated that yields could diminish by 30 per cent in Tajikistan before 2100.<sup>34</sup> For the latter, one-third of the CA's glaciers could melt before 2050.<sup>35</sup> In fact, from 1961-2012, CA's glaciers have lost nearly 27 per cent of their mass, accounting for four times the global average.<sup>36</sup>

This "triple link" between climate, glaciers and rivers, all present in CA, will lead to changes in water flow, causing political tensions and disrupting the socio-economic stability of the

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<sup>27</sup> Zhupankhan, A., Tussupova, K. And Berndtsson, R. (2017). Could Changing Power Relationships Lead to Better Water Sharing in Central Asia?, *Water*, 9 (139), pp. 1-17.

<sup>28</sup> Overland, I. and Vakulchuck, R. (2018, May 3). China's Belt and Road Gets a Central Asian Boost, *The Diplomat*. Retrieved from <https://thediplomat.com/2018/05/chinas-belt-and-road-gets-a-central-asian-boost/> [Accessed: 20 July 2018].

<sup>29</sup> Zhupankhan et al, *Could Changing Power Relationships Lead to Better Water Sharing in Central Asia*, p. 12.

<sup>30</sup> Putz, C. (2018, January 9). Uzbekistan's President to Visit Tajikistan soon, *The Diplomat*. Retrieved from <https://thediplomat.com/2018/01/uzbekistans-president-to-visit-tajikistan-soon/> [Accessed: 20 July 2018].

<sup>31</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 5.

<sup>32</sup> World Bank. (2018). *Forecasting for Resilience: Central Asia Strengthens Climate and Weather Services*. Retrieved from <http://www.worldbank.org/en/news/feature/2018/03/23/forecasting-for-resilience-central-asia-strengthens-climate-and-weather-services> [Accessed: 18 July 2018].

<sup>33</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 4.

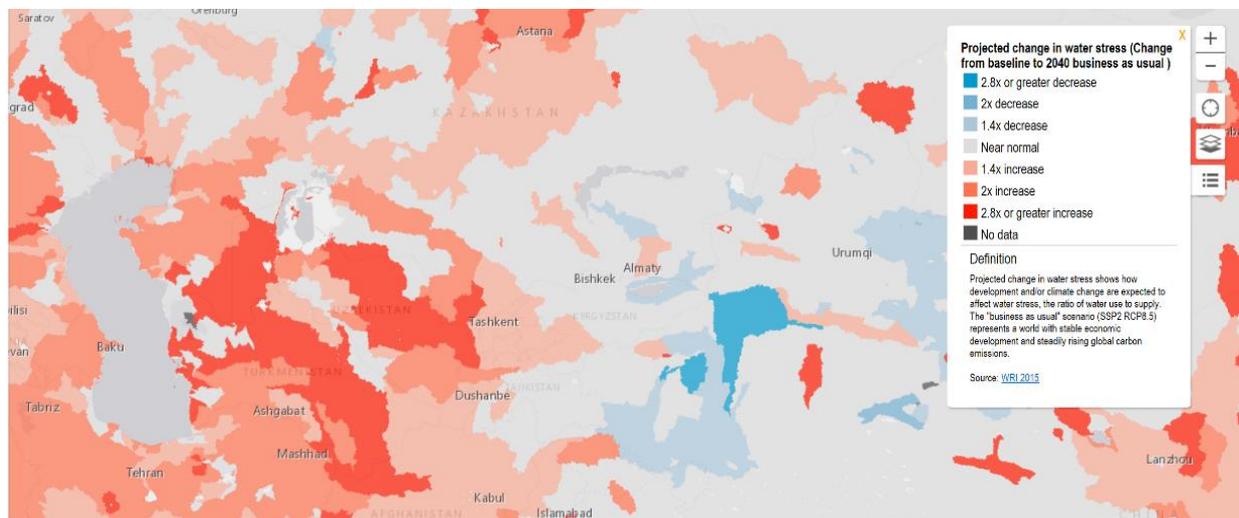
<sup>34</sup> World Bank, *Forecasting for Resilience: Central Asia Strengthens Climate and Weather Services*.

<sup>35</sup> Ibid.

<sup>36</sup> Zhupankhan et al, *Could Changing Power Relationships Lead to Better Water Sharing in Central Asia*, p. 10.

region. In fact, in the short term, 2020-2050, melting glaciers will provide greater quantities of water. However, in the long term, water availability will decrease creating unsustainable supplies which will put at risk the wellbeing of CA's population.<sup>37</sup> The map below shows the water stress in the region in 2040.

Figure 2. Projected change in water stress in 2040<sup>38</sup>



Due to the phenomena outlined above, various climate change and security hotspots have been identified in CA. These are defined as:<sup>39</sup>

Climate change and security hotspots are identifiable in geographic terms, and are characterized by ongoing tensions, environmental concerns or both. In each of these hotspots, climate change through one or more pathways is expected to undermine social or economic patterns, threaten infrastructure or livelihoods, or compromise security by exacerbating political or social tensions, conflicts or instability. Areas with weak institutions or lacking the effective mechanisms for transboundary environmental and security co-operation are especially vulnerable.

According to the Organisation for Security and Cooperation in Europe (OSCE), the two major security hotspots by 2030 will be the densely populated areas, including the Ferghana Valley, and the remote areas on the Afghan border (see Figure 3). The former will witness increasing stress due to high population density, which might cause tensions over Food-Energy-Water (FEW) resources diminished by climate change.<sup>40</sup> The latter,

<sup>37</sup> Ibid; Xu, M., Wu, H. and Kang, S. (2018). Impacts of climate change on the discharge and glacier mass balance of the different glacierized watersheds in the Tianshan Mountains Central Asia, *Hydrological Processes*, 32, pp. 126-145.

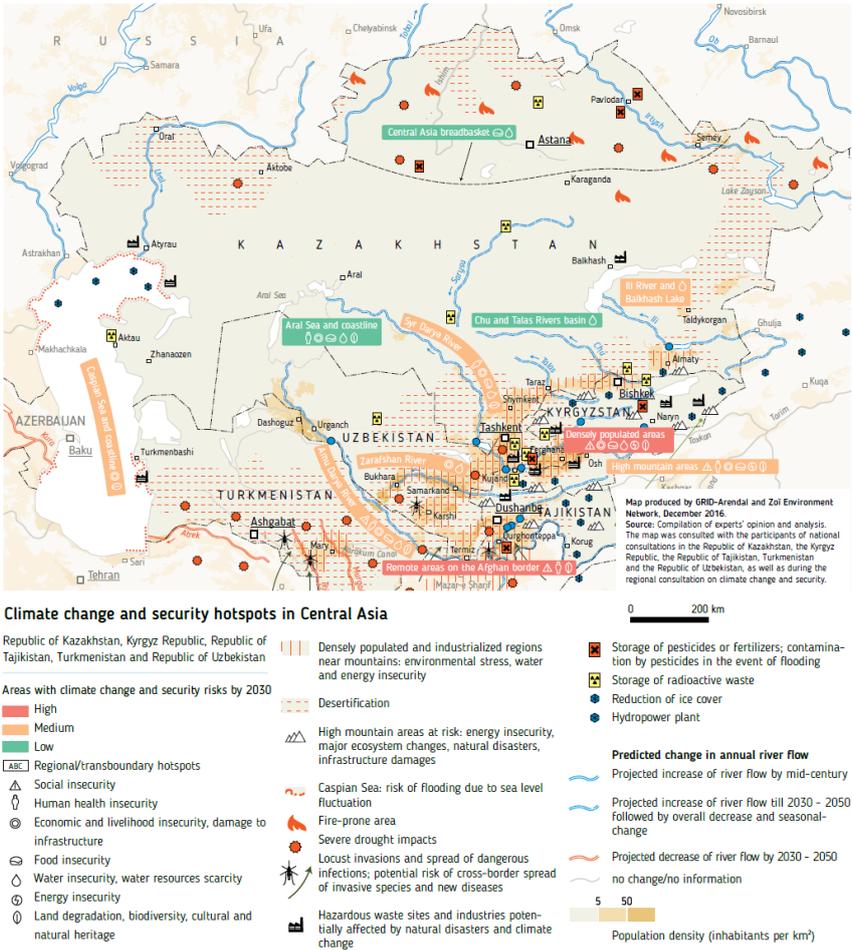
<sup>38</sup> World Resource Institute. (2018). *Projected change in water stress in 2040*. Retrieved from <http://www.wri.org/applications/maps/aqueduct-atlas/#x=76.03&y=39.07&s=ws!40!28!c&t=waterrisk&w=def&q=0&i=BWS-16!WSV-4!SV-2!HFO-4!DRO-4!ISTOR-8!GW-8!WRI-4!ECOS-2!MC-4!WCG-8!ECO-2!&tr=ind-1!prj-1!l=5&b=terrain&m=projected&init=y> [Accessed: 24 July 2018].

<sup>39</sup> Organisation for Security and Cooperation in Europe [OSCE]. (2017). *Climate Change and Security in Central Asia*, pp. 1-12. Retrieved from <https://www.osce.org/secretariat/331991>.

<sup>40</sup> Ibid, pp. 7, 9.

namely the Tajik-Afghan and Turkmen-Afghan borders, will be affected by extreme weather events posing security threats to the region.<sup>41</sup>

Figure 3. Climate Change and Security Hotspots in Central Asia<sup>42</sup>



From the above analysis, it can be seen how the already complex situation will become more unsustainable due to climate change.<sup>43</sup> Therefore, since “climate change is a threat multiplier of all unresolved environmental issues”,<sup>44</sup> there is an urgency for the region to put in place effective and transboundary adaptation and mitigation measures in order to have a resilient response to these long-term changes, which will affect not only the environment but also the socio-economic livelihood of CA’s population.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid, p. 6.

<sup>43</sup>Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 5.

<sup>44</sup> Ibid, p.13.

## EU-CA Cooperation

The EU's formal activity and cooperation with CA dates back to 2007 with the adoption of the first Central Asia Strategy.<sup>45</sup> In the strategy, the EU classifies water disputes amongst the main potential causes of conflict in the region and underlines the necessity of cooperation on water management and climate change.<sup>46</sup> In fact, although it recognises hydropower constructions as a mean to promote development in the region and in the neighbouring countries, the EU considers cross-boundary water management, through common agreements and cooperation between all the five countries, of uttermost importance for regional stability.<sup>47</sup> Hence, the facilitation of cooperative water management and the investment in renewable energy are amongst the EU's priorities in the region.<sup>48</sup>

The EU's activity in CA on environment and water issues occurs mainly through the WGECC set up during EU-CA High Level Conference in 2009 with the goal "to enable and facilitate a policy dialogue between the EU and CA countries and within the Central Asia region in order to enhance cooperation and support progress on environment and climate change issues".<sup>49</sup> The WGECC focuses on ensuring CA's institutional commitment to multilateral environmental agreements, environmental impact assessments and international conventions, increasing green and water infrastructure by guaranteeing access to climate financing, fostering multilateral cooperation in the region and enhancing stakeholder's capacity.<sup>50</sup> All these activities are funded by an EU special body named WECCOOP2 Platform.<sup>51</sup> Through WECCOOP2, the EU's financial assistance to environmental and social projects are diverse thanks to the EU's blending approach of various international financial institutions (IFIs), such as the EU Investment Facility for CA (IFCA), Green Climate Fund (GCF), European Investment Bank (EIB), European Bank for Reconstruction and Development (EBRD), French Development Agency and German Development Bank.<sup>52</sup>

At the eighth WGECC, held on 7-8 June 2018 in Tashkent, it was visible, as Valts Vilnītis, WECCOOP2 Team Leader explained, that the EU is mainly focused on attracting investment in CA and to provide know-how expertise.<sup>53</sup> For instance, the EBRD is the largest green

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<sup>45</sup> EEAS. (2017). *EU-Central Asia relations, factsheet*. Retrieved from [https://eeas.europa.eu/headquarters/headquarters-homepage/34927/eu-central-asia-relations-factsheet\\_en](https://eeas.europa.eu/headquarters/headquarters-homepage/34927/eu-central-asia-relations-factsheet_en) [Accessed 25 July 2018].

<sup>46</sup> EU Council. (2015). *Council conclusions on the EU Strategy for Central Asia*. Retrieved from <http://data.consilium.europa.eu/doc/document/ST-10191-2015-INIT/en/pdf>.

<sup>47</sup> European Parliament, *Water Disputes in Central Asia: Rising tension threatens regional stability*, p. 11.

<sup>48</sup> Ibid.

<sup>49</sup> WECCOOP2. (2016). *Action Plan on Environment and Climate Change (2017-2018) activities*. Retrieved from [http://wecoop2.eu/sites/default/files/documents/FINAL%20Action%20Plan%20%20EN%20LH\\_AP.pdf](http://wecoop2.eu/sites/default/files/documents/FINAL%20Action%20Plan%20%20EN%20LH_AP.pdf).

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> Pichugin, A. and Ahamer, G. (2017). *Investor Guide*. Presentation delivered on the 23 November at the Workshop on access to international investments in water, energy efficiency and waste management infrastructure in Almaty. Retrieved from <http://www.wecoop2.eu/press-media/news/workshop-access-investment>.

<sup>53</sup> Vilnītis, V. (2018). *Investor Guide and the Knowledge Centre Web Platform for CA – purpose, objectives, key points and future developments*. Presentation delivered on the 7-8 June at the 8th Meeting of the EU-CA

financier in CA, with Kazakhstan being amongst the world's biggest recipients of EBRD assistance with nearly USD 6.5 billion invested in 236 projects since the mid-90s.<sup>54</sup> Other than the EBRD, the EIB is another big investor in CA.

Other than through financing institutions, the EU is also present in the region through the European Union Water Initiative (EUWI), which was launched in 2002 with the aim of promoting water resource management and transboundary cooperation. EUWI uses Water Framework Directives (WFD) as key legislations and operational tools to inform CA on possible reforms that could be made.<sup>55</sup> Moreover, WECCOP2 also provides technical assistance for institutional capacity building and enhances civil awareness.<sup>56</sup>

From the analysis of the work of the EU in CA since 2009, it is evident that the WGECC have brought significant improvements in EU relations with CA, both as a whole and as individual countries. Nevertheless, it seems that the main foci and successes of the WGECC have been in the promotion of technologies, the improvement of efficient energies and the encouragement of private investments in renewable energies, rather than in facilitating regional dialogue on the creation of transboundary environmental laws, binding cooperation agreements and a sustainable environmental governance system. Therefore, although the EU finances climate action, environmental protection, renewable energy, power transmission and infrastructure development projects, there is still a lot of scope for it in CA.

## **Future recommendations**

In spite of the various frameworks put in place to improve water management, both by the national governments and the EU's assistance, the effectiveness of this governance system is still questionable.<sup>57</sup> Moreover, considering the effects that climate change will have, as illustrated above, it is necessary to find cooperative solutions promptly and build an effective response system in order for CA to become more climate change resilient. Therefore, this paper will now present four recommendations on how to improve the current situation, also drawing on the role that the EU can play. It needs to be underlined that these recommendations are by no means exclusive; the work to be done in CA regarding water management is immense and these suggestions represent only some of the work which can be done. The decision for choosing to focus on these recommendations

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Working Group on Environment and Climate Change in Tashkent. Retrieved from <http://wecoop2.eu/sites/default/files/documents/8WGECC/Presentations/Session%203%20Valts%20Vilnitis%20IG%20BRKC%2007061818.pdf>.

<sup>54</sup> WECCOP2. (2018a). *Investor Guide for preparation of investment projects in Environment, Climate Change and Water in Central Asia*. Retrieved from <http://wecoop2.eu/sites/default/files/documents/Investors%20Guide%20EN%20final%20280518.pdf>.

<sup>55</sup> European Union Water Initiative. (2014). *Water Policy Reforms in Eastern Europe, Caucasus and Central Asia*. Retrieved from <https://europa.eu/capacity4dev/euwi-community-space/document/water-policy-reforms-eastern-europe-caucasus-and-central-asia>.

<sup>56</sup> Vilnitis, V. (2018a). *Tailor made support: process and first outcomes*. Presentation delivered on the 7-8 June at the 8th Meeting of the EU-CA Working Group on Environment and Climate Change in Tashkent. Retrieved from <http://wecoop2.eu/sites/default/files/documents/8WGECC/Presentations/Session%202%20Valts%20Vilnitis%20Tailor%20made%20support%20070618.pdf>.

<sup>57</sup> Janusz-Pawletta, *Current legal challenges to institutional governance of transboundary water resources in Central Asia and joint management arrangements*, p. 889.

in specific is due to the fact that they have not been particularly common in the literature and that the EU has the potential to play a key role in these projects.

- 1) Work towards the establishment of a regional institution, with all five states represented, to decide on commonly agreed legislation, guidelines and concrete projects on transboundary resource management

As Janusz-Pawletta underlines, cooperation between the five states is the only key to sustainable transboundary water management.<sup>58</sup> Due to their past experiences, the negative effects of non-cooperation and of uniquely pursuing national strategies, without considering the negative transboundary environmental externalities, should be clear to the five CA countries. Hence, in order to avoid repeating past mistakes and facilitate cooperation, the establishment of a supranational regional institution where all the five members are represented could be the long-term solution. The establishment of a regional institution increases the interactions amongst the five players to an infinite number forcing them to cooperate. Thus, as Robert Axelrod has explained to us, in a game with infinite interaction, players will choose to cooperate.<sup>59</sup> Moreover, a regional institution will facilitate decision-making on how to deal with the negative externalities of transboundary management of water sources by putting in place some form of regulation which will avoid new Tragedies of the Commons. As Zhiltsov et al suggest, the creation of a supranational body may facilitate the consideration of loss-benefit analysis for each country and hence a mutual consideration of others.<sup>60</sup>

Moreover, by adopting regional strategies, a regional institution will encourage the discourse to move from "water resources" to "transboundary rivers". To date, the use of the term "water resources" has been justifying national interest in water policies, without taking into consideration the transboundary effects that these might have.<sup>61</sup> In fact, in CA countries, water resources are usually considered as state-owned, as explained by the 2003 Water Code of Kazakhstan (Article 8), the 1994 Kyrgyz law "On Water" (Article 5), 1993 Water Code of Tajikistan (Article 4) and Turkmenistan, and the 1993 Uzbek Law "On Water and Water Use" (Article 3).<sup>62</sup> This mindset has been the one behind the agreements which have been signed up to now, impeding the creation of a common strategy abandoning national interest goals.<sup>63</sup> Therefore, a regional organisation could enable joint management of water resources instead of nationally oriented ones.

The urgency of a regional institution to be put in place before climate change starts being even more visible and the encouraging political environment which we are currently

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<sup>58</sup> Ibid, p. 895.

<sup>59</sup> Axelrod, R. (1984). *The Evolution of Cooperation*. New York: Basic books, Inc., Publishers.

<sup>60</sup> Zhiltsov et al, *Transboundary Rivers in Central Asia: Cooperation and Conflicts Among Countries*, p. 18.

<sup>61</sup> Ibid, p. 7.

<sup>62</sup> Ibid, p. 13.

<sup>63</sup> Ibid, p. 17; Zhupankhan et al, *Could Changing Power Relationships Lead to Better Water Sharing in Central Asia*, p. 3.

witnessing in CA, suggest that a regional organisation might be possible in the long-term Central Asian strategy. In fact, scholars believe that under President Mirziyoyev prospects for regional cooperation have never looked so bright.<sup>64</sup> Moreover, Central Asian countries are starting to push for regional strategies. At the eighth Meeting of the WGECC last June, several Central Asian countries pointed out the need to come up with a regional strategy rather than focusing on the specific country goals.<sup>65</sup>

In this view, due to its experience in regional integration, governance and processes, the EU could play an important role in fostering this discourse in CA in the hope for the creation of this regional institution in the long-term. According to the 2015 *Joint Communiqué*, it is clear that the intention of the EU is to help CA develop laws, policies and regional cooperation, hence the EU could be the appropriate entity to provide assistance to this regional project.<sup>66</sup> Moreover, a supranational governance system requires transparency, equity, effectiveness, rule of law, accountability, coherency, responsiveness and integration.<sup>67</sup> In these areas, the EU has a long history of competence and could provide this regional organisation with technical assistance. Therefore, whilst the WGECC have been so far more focused on investment and financial assistance, there is a need for the EU to push for a dialogue on the development of regional strategies and this regional organisation, which will promote regional strategies and incorporate all the existing, highly overlapping and confusing, frameworks.

## 2) Encourage the adoption of the FEW-ecosystem nexus approach in national strategies

Water management institutions have so far adopted the Integrated Water Resource Management (IWRM) approach, an empirical concept implemented since the UN Agenda 21. The IWRM is "a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".<sup>68</sup> In CA, Kazakhstan was the first to adopt the IWRM.<sup>69</sup> However, the lack of monitoring, information management and stakeholder participation have made IWRM fail in CA.<sup>70</sup> On the other hand, the clear link between agriculture, energy, water and environment in CA has led scholars suggesting that water management should

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<sup>64</sup> Overland and Vakulchuck, China's Belt and Road Gets a Central Asian Boost.

<sup>65</sup> WECOOP2, *8<sup>th</sup> Meeting of the Working Group on Environment and Climate Change*.

<sup>66</sup> WECOOP2. (2015). *Fifth EU-Central Asia High Level Conference on Environment and Water Cooperation: Joint Communiqué*. Retrieved from <http://wecoop2.eu/sites/default/files/documents/00%20CLEAN%20FINAL%2012%20October%20%20JC%20ENGLISH.PDF>.

<sup>67</sup> World Water Assessment Programme. (2006). *WWDR2: Water: a shared responsibility*. Retrieved from <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/wwdr2-2006/>.

<sup>68</sup> United Nations. (2018). *Integrated Water Resources Management*. Retrieved from <http://www.un.org/waterforlifedecade/iwrm.shtml> [Accessed: 15 July 2018].

<sup>69</sup> Zhupankhan et al, *Could Changing Power Relationships Lead to Better Water Sharing in Central Asia*, p. 8.

<sup>70</sup> Ibid.

be framed as a FEW-ecosystem issue.<sup>71</sup> The adoption of the FEW-ecosystem nexus in CA's institutions could be beneficial as this approach fosters negotiations between these sectors avoiding fragmentation and ensuring harmonic policies.<sup>72</sup> Thus, policies would be decided and adopted by all four sectors in order to eliminate the possibility of non-intended negative environmental externalities. Moreover, such an interconnected system would enable quick and effective crisis response.<sup>73</sup>

The EU has been pushing for the FEW-ecosystem nexus approach as evident in the 2015 EU-CA *Joint Communiqué*.<sup>74</sup> Nevertheless, there is still no appropriate institution in CA. An *ad hoc* national institution should be created to enable members of all four communities to have an active role in water management decision-making processes. Therefore, the WGECC could push for the FEW-ecosystem nexus approach by inviting representatives from these other groups, mainly food and ecosystem, which do not seem to be as represented as the other two in the meetings, to attend the workshops. Moreover, the FEW-ecosystem nexus approach could be formally adopted as a strategy for CA in the next High Level Conference in 2019.

### 3) Recognise climate change as a security issue

Although all Central Asian states have adopted national strategies to fight climate change, climate change is still not framed as a national security threat.<sup>75</sup> Climate change is not a common discourse in the region and no Central Asian country appears to have adopted projects specifically targeted at climate change mitigation or adaptation.<sup>76</sup> Therefore, there is a need to increase this awareness before it is too late and climate change further stresses the poor water management system leading to social, economic and environmental disasters. Recognising the urgency of climate change and the need to come up with transnational agreements, might also speed up the establishment of the regional organisation mentioned above and, more generally, enhance cooperation.<sup>77</sup>

Consequently, there is a necessity to recognise climate change as a security issue in CA, by informing policy-makers and civil society. The EU can play a fundamental role in this considering the importance it gives to this issue as outlined in Horizon 2020. The EU could assist CA in developing clear plans on how to respond to melting glaciers and other adaptation measures which will be needed. Moreover, the EU must continue to frame climate change as a security threat for CA during conferences, provide technical and

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<sup>71</sup> Cai et al, *Understanding and managing the food-energy-water nexus – opportunities for water resources research*, p. 264.

<sup>72</sup> Ibid, p. 268.

<sup>73</sup> Granit, J., et al. (2010). Regional Water Intelligence Report Central Asia Baseline, *SIWI*, 15, pp. 1-32.

<sup>74</sup> WECOOP2, *Fifth EU-Central Asia High Level Conference on Environment and Water Cooperation: Joint Communiqué*.

<sup>75</sup> OSCE, *Climate Change and Security in Central Asia*, p. 5.

<sup>76</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 12; Vilnītis, *Tailor made support: process and first outcomes*.

<sup>77</sup> Chikalova, *Climate Change as a Political Threat Multiplier in Central Asia*, p. 11.

financial assistance on climate change projects, both in their planning and implementation stages, and raise awareness on the security implications of climate change amongst the population. Only through an effective pre-emptive planning will CA enhance its resilience against climate change and limit the damages to its future socioeconomic political stability.

#### 4) Continue to foster green energy investments

In CA there has been an increasing adoption of renewable energy (RE). This can be seen in Uzbekistan's aim to raise renewable energy production to 20 per cent by 2025 and the Astana Expo in 2017 on Future Energy.<sup>78</sup> Despite the first achievements, the share of RE in electricity generation is still low, from approximately 1 percent in Kazakhstan and Turkmenistan, and up to 3 percent in Uzbekistan and Tajikistan.<sup>79</sup> Nevertheless, CA has huge potentials in renewable energy, such as solar energy in Uzbekistan and Turkmenistan, wind energy in Kazakhstan, which has the potential to exceed 10 times the country's estimated electricity needs by 2030, and hydropower in Tajikistan and Kyrgyzstan.<sup>80</sup>

The EU and European Small and Medium-sized Enterprises are active in this field, investing and providing funds to RE projects. However, it needs to be recognised that other than the EU, there are other powers which have been exercising their influence in the region, including China. China's investments in CA through the Belt and Road Initiative raise concerns over their environmental sustainability. In fact, the population of Aravan in Kyrgyzstan has protested against the Chinese cement plant's construction which has caused increased pollution and health problems.<sup>81</sup> Similarly problems have arisen with the Chinese coal projects in Tajikistan.<sup>82</sup> Therefore, the EU should continue to hold dialogues with CA on RE and provide assistance to monitor the environmental sustainability of all projects that are approved in their territories. In fact, non-renewables projects should definitely be avoided considering the already imminent threats of climate change, the environmental degradation that these would cause exacerbating the existing damages, and the high potential for green energy in the region. Thus, the EU should continue to encourage policy dialogue on RE, increase awareness on its benefits and cooperate with all powers present in the region to focus on green growth rather than on a fossil fuel driven one.

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<sup>78</sup> EIAS, *Central Asia: shared past and common future, cooperation for sustainable development and mutual prosperity*.

<sup>79</sup> Ibid.

<sup>80</sup> Nabiyeva, K. (2015). *First Steps towards Energy Transition in Central Asia: Opportunities for German and EU Engagement*. Presentation delivered on 15 June at the Workshop on Supporting the Deployment of Low-Carbon Technologies in the ETC and SEMED regions in Istanbul. Retrieved from [http://www.iea.org/media/workshops/2015/platformistanbul2015/First\\_Steps\\_towards\\_Energy\\_Transition\\_in\\_Central\\_Asia\\_Opportunities\\_for\\_German\\_and\\_EU\\_Engagement.pdf](http://www.iea.org/media/workshops/2015/platformistanbul2015/First_Steps_towards_Energy_Transition_in_Central_Asia_Opportunities_for_German_and_EU_Engagement.pdf).

<sup>81</sup> International Crisis Group. (2017). *Central Asia's Silk Road Rivalries, Europe and Central Asia Report*, 245, pp. 1-35.

<sup>82</sup> Ibid, p. 14.

## **Conclusions**

From the observations above, it is clear that the EU must play a more holistic approach in CA by focusing not only on fostering clean energy investment and technical assistance, but by encouraging discussions on the creation of a regional institution and pushing for the adoption of the FEW-ecosystem nexus approach. After having briefly outlined the water mismanagement problems in CA, the multiplier threats of climate change and the EU-CA existing cooperation, this paper has argued that the EU's main role during the next High Level Conference should be to help CA countries recognise the multiple gains of a national adoption of the FEW-ecosystem nexus approach, of regional cooperation through the creation of a regional institution and of international cooperation through the common commitment in the fight against climate change and the unique approval of sustainable and green projects in the Central Asian territory. The adoption of these measures in CA can lead to sustainable development, climate change resilience, shared prosperity and political stability. Nevertheless, although this paper has provided these recommendations, it is necessary to point out that these are by no means exclusive, but they are only a few of the suggestions which the author came up with after analysing the existing literature on the issue. Thus, future studies should look into the feasibility of the EU's action on these policy recommendations and on the willingness of CA to accept the EU's help in these matters. In conclusion, the high potential of conflict over water in CA, the urgency of climate change and the positive political environment that characterises today's CA, suggest that there is room for the EU to take action on these recommendations in light of the upcoming EU-CA

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