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**Title of the paper**

*Central Asian Legal And Policy Responses To  
Climate Change\**

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## ***Abstract***

*Legal and policy responses to climate change in Central Asian countries are in its early stages, albeit progressing at a fast speed. All countries in the region have adopted soft law instruments on climate change, such as strategies, plans of action for implementing strategies or sectoral action plans for adaptation and mitigation. But Central Asian countries have not introduced substantive laws on climate change, instead they have incorporated their mitigation and adaptation objectives into their policies of national development strategies, and mainstreamed the issue across the sectors and are implementing related targets providing financial support to climate change related activities. Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan have more coherent legal and policy responses to climate change in the region. This article finds that in general countries' frameworks related to mitigations are more advanced, nevertheless, in recent time adaptation policies are increasingly improving. Also, this article finds that regional entities are progressively involving in the development and implementation of climate change policies, as well as, some marginal involvement are occurring at sub national level. This article finds that implementation of policies remains challenging due to the budget allocation. Finally, this article concludes that due to the strong impacts of climate change in the region, laws and policies on adaptation measures with ample financial mechanisms should be developed.*

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## **I. Introduction**

Legal and policy responses to climate change in Central Asian countries are in its early stages, albeit progressing at a steady pace. All countries in the region have adopted soft law instruments on climate change, such as strategies, plans of action for implementing strategies or sectoral action plans for adaptation and mitigation. But Central Asian countries have not introduced substantive laws on climate change; instead, they have incorporated their mitigation and adaptation objectives into their policies of national development strategies, and mainstreamed the issue across the sectors and are implementing related targets providing financial support to climate change related activities.

This paper studies the characteristics of climate change legislation in Central Asian countries, focusing on laws regulating climate change and then at

the broader normative context to soft law instruments such as strategies, policies and action plans through which countries implement climate change related targets. This paper reviews the best practices and normative tendencies that guide the development of climate change law in Central Asian.

National Communications to the United Nations Framework Convention on Climate Change (UNFCCC) by countries in Central Asia on climate change related issues shows that when dealing with environmental and climate change issues it is important to take into consideration the facts of mainstreaming climate change objectives within a broader range of sectors, and budgetary allocations for implementing related targets. Thus, this paper analyzes climate legislation in Central Asia and describes the main trends in climate change law in the region with the examples of the climate change strategies and policies at regional, national and sub national levels with specific examples of budgetary allocations and enforcement challenges. This article finds that implementation of policies remains challenging due to the budget allocation. This article concludes that due to the strong impacts of climate change in the region, laws and policies on adaptation measures with ample financial mechanisms should be developed.

## **II. Climate Change Impacts to Central Asia and Legal and Policy responses**

### **1. Climate Change and related laws and policies**

Upon independence, heads of the five republics Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan had defined Central Asia as separate region. Climate in Central Asia is continental arid (Turkmenistan, Uzbekistan) and semi-arid (Kazakhstan, Kyrgyzstan, Tajikistan) with warmer winters in the

south and colder winters with severe frosts in the north. Maximum precipitation falls during the spring season throughout most of the region, associating with the northward migration of the Iranian branch of the Polar front. The climate in arid zones is hot, unclouded, and dry, whilst moist in the semi-arid subparts. Climate is changing and Central Asia is vulnerable to its impacts. Increased temperature is already affecting the region by changing hydrology and impacting with extreme weather events droughts, mudflows, floods, heat waves, windstorms, and forest fires. Moreover, it is projected that future climatic changes would be worst and could severely affect the region.<sup>1</sup>

Since nineteenth century both temperatures in winter and summer has been steadily increasing, with almost annual  $+1^{\circ}\text{C}$  during the twenty-twenty first centuries.<sup>2</sup> The average temperature raise in the region over the last century has been observed slowest in the region by  $0.18^{\circ}\text{C}$ , with variable changes by country. In mountainous Kyrgyzstan the average speed of temperature growth has been observed increase by  $0.78^{\circ}\text{C}$  since last century. In Tajikistan another mountainous country of the region, temperature has been risen in April, November, and December months. In lowland areas of Tajikistan, as a result of depression from Pamir Mountains (such as the valley of Lake Bulinkul) cooling was observed by dropping in  $1.1^{\circ}\text{C}$  for the last half century. In Kazakhstan, the average annual warming was observed by  $0.31^{\circ}\text{C}$  for the last two third of century. In Uzbekistan, temperature increased by to  $0.29^{\circ}\text{C}$  during last fifty years.

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<sup>1</sup> Regional Environmental Centre for Central Asia/ Asia Pacific Adaption Network, *Gap Analysis on Adaptation to Climate Change in Central Asia*, Hayama: Institute for Global Environmental Strategies, 2011, p. 1. Available at [www.apan-gan.net](http://www.apan-gan.net) or [www.asiapacificadapt.net](http://www.asiapacificadapt.net) (accessed 01.15.2016) (RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*).

<sup>2</sup> Lioubimtseva, Elena, Henebry, Geoffrey, *Climate and environmental change in arid Central Asia: Impacts, vulnerability, and adaptations*, *Journal of Arid Environments* 73, 2009, p.966 Available at <http://www.sciencedirect.com/science/article/pii/S0140196309001220>. (accessed 01.10.2015 ). (Lioubimtseva, Elena, Henebry, Geoffrey, *Climate and environmental change in arid Central Asia: Impacts, vulnerability, and adaptations*)

Temperature projections of the future show that Central Asian countries are particularly the most vulnerable to climate change impacts compared to the other neighboring countries in Europe. The Intergovernmental Panel on climate change predicts that warming across the Central Asia will warm much more rapidly than global average.<sup>3</sup> It is predicted that summer warming in 2071-2099 is about 2.5 and 6.5 °C above 1951–1980, in 2 and 4 °C world, respectively. The normalized warming shows how anomalous the projected warming is compared to fluctuations experienced in the past. Under the normalized warming the southern parts of the region (i.e., towards Tajikistan, Kyrgyzstan, south-eastern Uzbekistan, southern Kazakhstan and northern China) would experience the strongest temperature change. In a global 2 °C, the monthly summer temperature distribution in this southern part of region would shift to 2–3 °C warmer and in a global 4 °C to 6–7°C. Such a shift entails that the summer temperatures in the southern part of Central Asia would change to a new climatic conditions by the end of the twenty first century. In the other regions of the Central Asia it is predicted less temperature shifts in normalized temperature, nevertheless, a warming at global rate, least by 2 °C or 4°C warmer, is predicted to occur here during the twenty first century.

Climate change could severely affect the development of main socio-economic sectors such as water, land, agriculture, energy, and health. The impact of climate change to the development of socio-economic sector is a separate question of research; nevertheless, it would be discussed here generally. Water resources in the region are highly sensitive to climate change. Warming

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<sup>3</sup> Regional Environmental Centre for Central Asia, *Towards Paris 2015: What does a new global climate policy mean for Central Asia?*, Asia Pacific Adaptation Network, 2015, p.9. Available at <http://www.asiapacificadapt.net/> (accessed 01.10.2015.) (RECCA, *Towards Paris 2015: What does a new global climate policy mean for Central Asia?*).



temperature would result in changes in snow cover, earlier snow melt, and glacial melt. Early temperature rise would result in earlier ice and snow melt, which could shift the timing of river flow, from summer to spring, within the next few decades. This shift could have an adverse impact for agricultural water during critical crop growing periods. Furthermore, it is projected the intensification of runoff in all river basins in the region, increasing the risk of extreme events. Floods, mudslides, and droughts have already impacted socio-economic sectors in the region. For instance, only mudslide events resulted in \$150 million economic losses, whereas over 7000 people have migrated from landslide zones in Kyrgyzstan alone since 1992. Flooding has been occurring almost every year in Tajikistan, and only in 2005 it led to 70 % reduction in grain production and 95 percent reduction in grape production with 71 % of affected people to have a loss in income.<sup>4</sup>

Thus, Central Asia is expected to be impacted by climate change strongly. Legal institutions and instruments, as well as policies will play an important role in climate change adaptation, along with technological, managerial, and behavioral strategies. Laws and policies can facilitate adaptation measures through using regulations to reduce vulnerability to impacts of climate change, whilst it can establish the legal architecture for funding arrangements for adaptation costs and liability for climate change. It can furthermore assure accountability for the adaptation decision making process, and address some of the social justice aspects of adaptation.<sup>5</sup> Therefore, in the midst of critical climate change impacts it is of utmost importance to study these laws and policies. This

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<sup>4</sup> RECCA, *Towards Paris 2015: What does a new global climate policy mean for Central Asia?* p. 9.

<sup>5</sup> McDonald, Jan, *The role of law in adapting to climate change*, WIREs Climate Change, 2, p. 283. Available at <http://onlinelibrary.wiley.com/doi/10.1002/wcc.96/pdf>. (accessed 05.22.2016.). (McDonald, Jan, *The role of law in adapting to climate change*)

approach would draw a general picture of Central Asian legal and policy responses to climate change. Central Asian countries address climate change through related laws, presidential decrees, parliamentary decrees, as well as policies and strategize, albeit from substantive perspective these norms are not abundant in those countries. Nevertheless, all five countries have developed norms and institutions to be eligible for the implementation of projects under the Kyoto protocol's Clean Development Mechanism.<sup>6</sup> None of Central Asian countries have approved substantial climate change laws. Rather, they have provisions on environmental protecting in constitutions and have adopted laws on environmental protection, national strategies and polices related to climate change, as well as environmental protection. In the next part, constitutions of all Central Asian countries with respect to climate change issues would be studied.

## **2. Constitution**

The supreme law in all Central Asian countries is their constitutions. Originally inspired by the constitution of Russia, Central Asian countries have relatively similar constitutions and codified Roman-Germanic law systems. Countries are constantly cooperating and sharing experience and expertise on constitutional development through the Inter-Parliamentary Assembly of Commonwealth of the Independent States.<sup>7</sup> All Central Asian countries have incorporated environmental rights into their respective constitutions with explicit references to environmental protection as a responsibility of the state. For

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<sup>6</sup> At the time of writing, there is only one registered CDM project between hosting parties of Uzbekistan and Netherlands.

<sup>7</sup> Baglai, Marat/Leibo, Yuriy/Etin, Lev, Constitutional Law of Foreign Countries (Konstitucionalnoe Pravo Zarubejnih Stran), Norma, 2004, pp. 671-673.

instance, article 31.1 of the Constitution of Kazakhstan states that ‘The state shall set an objective to protect the environment favorable for the life and health of the person’. Pursuant to article 100, paragraph 6 of the Constitution of the Republic of Uzbekistan ‘The joint conducting of the local bodies of authority shall include:

- protection of the environment’.

Constitution of Turkmenistan in article 11 envisages that ‘The state is responsible for safeguarding the national historical and cultural heritage, *natural environment*, ensuring equality between social and ethnic communities.[emphasis added]’. In accordance to the article 12 of the Constitution of Kyrgyzstan ‘environmental system... shall enjoy special protection from the State’. According to article 38 of the Constitution of the Republic of Tajikistan ‘..state shall take measures aimed at protecting environment,..’. In meantime Turkmenistan than any other country in the region has delegated the local authority to take measures on environmental issues. According to article 86 paragraph 4 of the Constitution of Turkmenistan, local authorities or ‘Gengeshes’ are mandated ‘to define measures for rational use of natural resources and environmental protection’, thus decentralizes government towards environmental rights by empowering local authorities.<sup>8</sup> Other countries in the region have merely highlighted environmental rights on addressing impacts of climate change in their respective constitutions. Current climate change realities require the prioritization of climate change issues and environmental rights in the national constitution, which would build resilience of vulnerable people and populations through adaptation to extreme weather events and environmental

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<sup>8</sup> Constitution of Turkmenistan, art. 86, § 4.

protection for climate change mitigation and adaptation.<sup>9</sup> In the next part, national climate change policies would be analyzed.

## **2. National climate change policies**

All Central Asian countries rely on sectoral laws and policy instruments, such as environmental laws, strategies, as well as action plans to guide policy makers on climate change issues. These sectoral laws and soft-law instruments thus currently constitute the primary sources of climate change law in region. Laws and strategies as well as their legal status differ between the countries. While all countries have included environmental rights into their national laws and strategies, climate change issues are simply included in soft-law instruments, such as in policies or strategies. Central Asian countries have integrated involvement of civil society as well as their contribution in the climate change policy-making processes merely through *ad hoc* participatory processes. Central Asian countries define national priorities for climate change mitigation and adaptation through various instruments. From broader to specific instruments, countries have incorporated the laws and policies to climate change in national development plans and strategies (Tajikistan, Kyrgyzstan, Turkmenistan, and Kazakhstan), sectoral environmental policies and strategies (Tajikistan, Kyrgyzstan, Turkmenistan, Kazakhstan and Uzbekistan), and specific climate change policies and strategies (Tajikistan, Kyrgyzstan and Turkmenistan). Significant combination, in this regard, would be presented by Tajikistan,

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<sup>9</sup> Aguilar, Soledad/ Recio, Eugenia, *Climate Law in Latin American Countries*, in *Climate Change and the Law*, edited by Hollo, Erkki/ Kulovesi, Kati/ Mehling, Michael, Springer, 2013, p.655. (Aguilar, Soledad (et al.) *Climate Law in Latin American Countries*)

Kyrgyzstan and Turkmenistan, who have developed specific climate change policies from their national development strategies, as well as sectoral environmental policies, whilst several other specific policies are in the process of development. Specific climate change policies are on the way to be developed by Kazakhstan and Uzbekistan. Although the climate change law explicitly is not approved in any of the Central Asian countries, the combination of climate change issues with national development plans and sectoral policies are allowing them to access to the state budget for tackling climate related issues.

Central Asian countries based on the existed laws and policies are working to develop further specific policy responses to climate change or mainstream a climate change responses into the sectoral plans. Tajikistan have adopted the Climate change action plan, whilst Turkmenistan had adopted the Strategy on climate change and currently, along with Kazakhstan, is working on the national action plans on climate change. Kyrgyzstan and Uzbekistan are focusing their actions on adopting the sectoral plans and policies that would cover range of adaptation and mitigation activities in a various key socio-economic sectors. For instance, Kyrgyzstan is focused on the short term policies on water resources, agriculture, forestry, human health, extreme weather events, and biodiversity.<sup>10</sup> Along the same line, Uzbekistan is focusing its actions on the efficient land and water resource usage, sustainability of agriculture sector, and land degradation prevention policies.<sup>11</sup>

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<sup>10</sup> Climate change center in Kyrgyz Republic, *Kyrgyzstan and Climate Change*, Climate change center in Kyrgyz Republic, 2013, Available at <http://climatechange.kg/en/ky-rgy-zstan-i-izmenenie-klimata/>. (accessed 01.10.2016 )

<sup>11</sup> State committee of the Republic of Uzbekistan for Natural Protection, *Climate Change: Priority Action Needs for Uzbekistan (Izmineniya Celimata: Prioritetniye Potrebnosti v Deystviyakh Uzbekistana)*, 2011, pp.1-3. Available at <http://uznature.uz/?q=ru/node/70>. (accessed 01.10.2016 ) (SCRUNP, *Climate Change: Priority Action Needs for Uzbekistan*).

Substantively, the scope of climate related policies in region represent a broad variety of focus. In most of the cases, polices have been developed in collaboration with various relevant ministries and agencies. Most of these policies establish national goals both for adaptation and mitigation. The implementation of policies in most of the cases are incorporated and mandated to public authorities' activities. Nevertheless, as most of the polices aim to provide a guidelines for response measures to climate related issues, in some cases they are not subject to substantive controls over the implementation and enforcement. All countries have been taken measures to develop other specific legal framework requiring implementation and enforcement remedies of national climate change policies. Already, large number of policies and legal framework has been adopted by region. Overarching climate change related policies and legal frameworks could represent not only their usefulness, but also could challenge in terms of both overlaps and ensuring implementation. For instance, Tajikistan along with expressing the strong political will, has adopted the Law on Environmental Protection (2011), National Action Plan on mitigation of climate change (2003), National Environmental Action Plan (2006), while National Climate Change Adaptation Strategy is being under development.<sup>12</sup> Given that laws and policies target different issues of climate change and provide a concrete action, the overarching norms and goals are useful components of a legal framework. Nevertheless, without concrete implementation and enforcement mechanism, the proliferation of law and policy instruments could lead to more chaotic and less effective implementation, provided that climate change plans need to be

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<sup>12</sup> Government of the Republic of Tajikistan, *Intended Nationally Determined Contribution towards the Achievement of the Global Goal of the UN Framework Convention on Climate Change (UNFCCC) by the Republic of Tajikistan*, 2015. Available at <http://www4.unfccc.int/> (accessed 01.10.2016) (Tajikistan INDC).

harmonized with existing sectoral policies and ensure coherent policy frameworks and clear financial mechanism.<sup>13</sup> This would have a positive effect on attracting additional resources, both from the international cooperation, donor community, and general budget financing.

### **(1) Climate change within national development policies**

Upon the collapse of Soviet Union, to ensure the national security and the economic development used to be key national policy goals for new reappeared Central Asian countries. Despite the economic difficulties and challenges, particularly in terms of transition from the planned economy to the market orientated economy, climate change have been considered in national development policies, providing a strong basis for mainstreaming mitigation and adaptation priorities in a relevant sectors. For instance, Tajikistan, Kyrgyzstan, Kazakhstan, and Turkmenistan have included climate change related issues in their highest national policy instruments for a development planning, considering environmental issues as pivotal for economic growth. Hence, Tajikistan has included environmental issues into national development policy, namely the National Development Strategy of the Republic of Tajikistan for the period of 2007-2015, which mainstreamed climate change issues from national planning into sectoral planning. This strategy acknowledging environmental issues as a key social sector issue, has provided a configurations for strengthen institutional potential on environmental sustainability as well as provisions on financial resources. It mandated the resolution of problems associated with natural disasters

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<sup>13</sup> Aguilar, Soledad (et al.) *Climate Law in Latin American Countries*, p. 661.

through their prevention and the effective management of natural resource, as well as promotion of conservation and proper management of biodiversity and ecosystems.<sup>14</sup>

Kyrgyzstan has had adopted set of national development plans, nevertheless, they are largely failed to achieve their objectives or left partially unimplemented, given the bad political governance during the rule of the first two presidents of the country. Recently, Kyrgyzstan has adopted the National Sustainable Development Strategy of the Kyrgyz Republic for 2013-2017, which codifies healthy natural environment as one of the main visions. Along with other socio-economic objectives, this strategy includes the environmental security as the main source for the successful national development. The strategy has required pursuing key priority actions in order to enhance capacity in preparedness for, and responding to, disasters at a national, regional, district and a local government levels respectively, development of early warning systems, as well as improving capacity in disaster risk mitigations.<sup>15</sup>

Kazakhstan as well has had efforts to mainstream climate change issues into its main policy namely the Development strategy of Kazakhstan-2050. The strategy has highlighted the seven long-term priorities, where improving the healthcare system and solving environmental issues are the fourth in line. This strategy has mandated to launch the information campaigns to promote healthy living, nutrition, hygiene, and sanitation in order to solve environmental issues.

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<sup>14</sup> Government of the Republic of Tajikistan, National Development Strategy of the Republic of Tajikistan for the Period to 2015 (Strategiyai Millii Rushdi Jumhurii Tojikiston Baroi Davrai Soli 2015), 2007. Available at <http://www.unpei.org/sites/default/files/PDF/TAJ-National-Development-Strategy-en.pdf> (accessed 01.08.2016).

<sup>15</sup>National Council for Sustainable Development of the Kyrgyz Republic, *National Sustainable Development Strategy for the Republic of Kyrgyzstan*, 2013. Available at [https://eiti.org/files/Kyrgyz\\_NSSD-final-version-eng-Feb4.pdf](https://eiti.org/files/Kyrgyz_NSSD-final-version-eng-Feb4.pdf).



Strategy incorporates in itself the Green Economy Concept purporting to develop an alternative energy sources (notably solar and wind power) for at least half of the country's total energy consumption by 2050.<sup>16</sup> Thus, inclusion of environmental issues and ways of combating it in main development strategy of country has represented government willingness to pursue a more active policy in environmental issues as the economy grows.<sup>17</sup>

Turkmenistan has mainstreamed climate change issues through the acknowledgment of the optimization of the energy mix options, protection, and rehabilitation of nature and ecosystems, as driving force towards economic development. Therefore, the government in the National Strategy for Social and Economic Development between 2011 and 2030 has mandated 'to create a resource saving potential in the country, and environmentally safe society, in order to develop the economy in innovative ways'. This strategy resulted in an adoption of the National Climate Change Strategy in 2012, which has reflected actions ensuring reduction of GHG emissions by 2030. This strategy has envisaged the development of National Action Plans for Adaptation and Mitigation, under which all public institutions and local governments would be required to integrate and elaborate their activities on the same line with this action plan as well as consider it while developing their own local programs and plans for a socio-economic development.<sup>18</sup> The progress of implementation of this strategy is planned to be audited every five consecutive years at the national level,

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<sup>16</sup> Green Economy Concept for the Republic of Kazakhstan, 2013. Available at <https://strategy2050.kz>. (accessed 01.12.2016)

<sup>17</sup> Utegenova, Ailuna, *Kazakhstan's 2030 Development Strategy : significance and results*, in OSCE Yearbook, 2010, p.137. Available at <https://ifsh.de/file-CORE/documents/yearbook/english/10/Utegenova-en.pdf>. (accessed 01.12.2016)

<sup>18</sup> Intended nationally determined contribution of Turkmenistan, 2015, p.6. Available at <http://www4.unfccc.int/> (accessed 01.12.2016) (Turkmenistan INDC).

with respect to the implementation of taken responsibilities by Turkmenistan before UNFCCC.<sup>19</sup> Moreover, regularly 2 times a year all ministries and related departments prepare reports on implementation of the National Strategy on Change Climate before the government.<sup>20</sup>

Central Asian countries that have included the climate change priorities in their national development plans, notably Tajikistan and Kyrgyzstan, are also working on the development of separate substantive and robust climate change strategies, whilst Kazakhstan is attempting to develop a legislative framework to foster the implementation of already existed climate change related strategies. As was said above, Uzbekistan has not yet mainstreamed climate change issues into any main national development strategy due to the lack of such strategy. Uzbekistan has had rather incorporated climate change related issues into extensive variety of economic development policies. Recently, however, it has adopted the national strategy of Uzbekistan Vision 2030. Uzbekistan with this strategy aims to reach the status of upper-middle-income country by the year of 2030.<sup>21</sup> Along with economic development mechanisms, the strategy sets provisional goals for the reduction of the energy-intensity of GDP and for increasing the share and use of renewable sources of power, primarily solar power. Currently, Uzbekistan is drafting legislation on renewable energy sources,

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<sup>19</sup>Government of Turkmenistan, National Climate Change Strategy of Turkmenistan, 2012, p.19 Available at [http://www.tm.undp.org/content/turkmenistan/en/home/library/environment\\_energy/National-Climate-Change-Strategy-of-Turkmenistan.html](http://www.tm.undp.org/content/turkmenistan/en/home/library/environment_energy/National-Climate-Change-Strategy-of-Turkmenistan.html). (accessed 01.12.2016) (National Climate Change Strategy of Turkmenistan).

<sup>20</sup> Turkmenistan INDC.

<sup>21</sup> Cornia, Giovanni, Uzbekistan's development strategies: Past record and long-term options, Dipartimento di Scienze per l'Economia e l'Impresa, Università degli Studi di Firenze, 2014, p.1 Available at [http://www.disei.unifi.it/upload/sub/pubblicazioni/repec/pdf/wp26\\_2014.pdf](http://www.disei.unifi.it/upload/sub/pubblicazioni/repec/pdf/wp26_2014.pdf). (accessed 15.01.2016).

whilst it has already revised building codes to meet higher energy efficiency standards.<sup>22</sup>

## (2) Sectoral policies

Rationalizing climate change objectives into different sectors in the public administration is also an important condition for implementing climate change measures.<sup>23</sup> Specifically, from National Communications to UNFCCC following sectors are identified as the key public sectors: water resources and agriculture; forestation, biodiversity, and ecosystems; public health; disasters and extreme events; urban area; energy, industry, transport, oil and gas. Reasonably, adoption of policies in these priority sectors is in trend among the Central Asian countries. Among the others special awareness in all Central Asian countries is given to water resources sector, as it has a significant value for regional development as well as it is highly vulnerable to climate change impacts.<sup>24</sup> Legal framework to develop water management has been adopted in all Central Asian countries. Tajikistan, Kyrgyzstan, Kazakhstan, Turkmenistan implements the Water Code, whereas the Law on water and water use is inactive in Uzbekistan. Notably, Kyrgyzstan, and Tajikistan to no less important level have updated their Water

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<sup>22</sup> Zoi Environmental network, *Uzbekistan: Climate facts and policy*, Countries of Central Asia - Climate Facts and Policy, 2016, P.4. Available at <http://www.zoinet.org/web/sites/default/files/publications/CC-Uzbekistan-FINAEI.pdf>. (accessed 15.01.2016).

<sup>23</sup> Aguilar, Soledad (et al.) *Climate Law in Latin American Countries*, p.664

<sup>24</sup> Regional Environmental Centre for Central Asia/ Asia Pacific Adaption Network, *Gap Analysis on Adaptation to Climate Change in Central Asia*, Hayama: Institute for Global Environmental Strategies, 2011, p.30. Available at [www.apan-gan.net](http://www.apan-gan.net) or [www.asiapacificadapt.net](http://www.asiapacificadapt.net) (accessed 15.01.2016) (RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*).

Codes to incorporate climate change concerns.<sup>25</sup> In terms of soft laws, Central Asian countries have developed strategies that indirectly deal with climate change impacts to water resource sector, including water conservation and sustainable water use, combating land degradation, sustainable irrigated agriculture, sustainable use of rangelands - the diversification of grazing methods, increasing the productivity of crop and livestock production, preservation and maintenance of lake and river ecosystems.<sup>26</sup> Kazakhstan by the Decree of President in 2010 has adopted State Program on management of water resources, aiming to facilitate water security through increasing water management efficiency,<sup>27</sup> which mandated adoption of the Plan of Action for the year of 2014-2020. Tajikistan in 2001 adopted the Concept on rational use and protection of water resources. This concept sets the necessity of rational use and protection of water resources, as well as promotes the sustainable development of country's economy.<sup>28</sup> In 2011, Tajikistan approved the National climate and health strategy where water resources were redefined as the main vulnerable sector among the other sectors which projected to be affected by the impacts of climate change. Uzbekistan adopted the Program on measures of enhancing melioration condition of irrigative lands and rational use of water resources for the period of 2013-2017. Kyrgyzstan is developing the National Water Strategy, under the mandate of the Water

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<sup>25</sup>Water Code of the Republic of Kyrgyzstan, art.6, § 1.

<sup>26</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, pp.31-41.

<sup>27</sup>Petrakov, Igor, Development dynamics of water legislation in Central Asian countries (Dinamika razvitiya vodnogo zakonodatelstva v stranakh Centralnoi Azii), National Water Law of Central Asian Countries, Knowledge Base "International and National Water Law", Scientific-Information Center of the Interstate Coordination Water Commission of the Central Asia, 2015, p.25 Available at [http://www.cawater-info.net/bk/water\\_law/pdf/petrakov15.pdf](http://www.cawater-info.net/bk/water_law/pdf/petrakov15.pdf). (accessed 01.15.2016).

<sup>28</sup> Decree N 551 of the Government of the Republic of Tajikistan on the adoption of adopted Concept on rational use and protection of water resources (Konceptsiya po racionalnomu ispolzovaniyu i okhrane vodnih resursov v Respublike Tadjikistan) of 1 December 2001.

Code.<sup>29</sup> Turkmenistan drafted the Strategy of development of water resources till 2030, envisaging in it an adaptation measures to water resources.<sup>30</sup> Yet, comprehensive clear science-based sectoral policies and strategies are being under the development by region.<sup>31</sup>

### **III. Adaptation and mitigation balance**

#### **1. Adaptation**

Climate change impacts to Central Asian countries and countries' contribution to climate change with regard to GHG emission differ in the region, but there are several shared key traits. All countries consider adaptation and mitigation as the two key strategic directions for addressing climate change. The governments originally had paid more attention to mitigation actions, such as reduction of GHG emissions and increasing energy efficiency.<sup>32</sup> Nevertheless, due to the high vulnerability of their respective economies to the already changing climate, countries are shifting their focus towards increased attention on adaptation issues. This is happening due to the shared vulnerabilities to climate and environmental challenges by the region, the defined priorities towards

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<sup>29</sup> Ministry of agriculture and melioration of the Republic of Kyrgyzstan/ European Economic commission/United Nation Organization, *National dialogue on water policy in Kyrgyzstan in the sphere of integrated management of water resources (Natsionalniy dealog po vodnoi politike v Kirgizistane v sfere integrirovannogo upravleniya vodnimi resursami)*, Progress review for the period of 2008-2013, 2013, p.14. Available at [https://www.unece.org/fileadmin/DAM/env/water/meetings/NPD\\_meetings/2013/Kyrgyzstan/pb\\_rus.pdf](https://www.unece.org/fileadmin/DAM/env/water/meetings/NPD_meetings/2013/Kyrgyzstan/pb_rus.pdf). (accessed 01.20.2016).

<sup>30</sup> Government annual report for 2015. Available at <http://turkmenistan.gov.tm/?id=10208> (accessed 01.20.2016).

<sup>31</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p.41.

<sup>32</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p.28.

adaptation are also common. As was mentioned above, water resources, agriculture, energy, human health, natural ecosystems, forests, and biodiversity have been defined by all five countries of Central Asia as the most vulnerable sectors to climate risks. Although the level of impacts might fluctuate from country to country, the aforementioned sectors have been considered the first and foremost in policy implementation.<sup>33</sup> The inclusion of adaptation measures to the National Development Plans, climate change strategies as well as development of sectoral plans for adaptation, represents the shift towards adaptation by the region. For instance, Tajikistan is in the process of development of the new adaptation policies for reduction of vulnerability to the impacts of climate change, as well as full-scale integration of the climate resilience and adaptation measures into already existed policy instruments. For that purposes, Tajikistan is currently developing the National Development Strategy of the Republic of Tajikistan till 2030 and National Climate Change Adaptation Strategy. Also, the other small scale sectoral strategies based on vulnerability assessments are being drafted.<sup>34</sup> There have been already taken steps to increase adaptive capacity in specific sectors, including adoption of the State Program for Study and Preservation of Glaciers of the Republic of Tajikistan for 2010-2030. This program develops a conservation and disaster risk managements measures.<sup>35</sup> For the past ten years in Tajikistan “water related natural disasters’ says President Emomaly Rahmon, ‘have caused to the economy of the country [a] loss of US\$1 billion and took

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<sup>33</sup> RECCA, *Towards Paris 2015: What does a new global climate policy mean for Central Asia?* p.10.

<sup>34</sup> Intended Nationally Determined Contribution of the Republic of Tajikistan. Available at <http://www4.unfccc.int/> (accessed 02.03.2016).

<sup>35</sup> Kayumov, K, *The first comprehensive international scientific expedition to study the state of the glaciers and the environmental situation in the upper reaches of Vakhsh and Panj rivers*. Glaciers and Hydrology, Part 1, "Irfon", 2013, p.8. Available at [www.meteo.tj/files/doc/Англ.docx](http://www.meteo.tj/files/doc/Англ.docx) (accessed 02.03.2016).

hundreds of lives”<sup>36</sup>, which fairly implies the shift towards increased development of adaptation measures.

Kyrgyzstan for dealing and managing the extreme weather events has adopted the Law on Protection of the Population and Territories from Natural and Man caused Emergency situations, focusing on efforts to reduce the loss of life and injuries, and the economic and social impacts of future events. Also, policies in dealing with extreme weather events and managing natural resources being under the development, with some have been already adopted. The government has adopted the Package of Measures to Ensure Environmental Security of Kyrgyz Republic, which focuses on the need for research on the condition of glaciers, and envisages to develop, first, the Climate Profile of Kyrgyz Republic, and then, the National Climate Strategy.<sup>37</sup> Under the Central Asian Countries Initiative on Sustainable Land Management National Framework Program on Land Resources Management for 2006-2016 in Kyrgyz Republic was adopted. This program focuses on land degradation, sustainable land, and water resource management, and shows a positive signal with regard to regional cooperation of country on climate change issues.

Turkmenistan is the only country in Central Asia who has adopted the National Strategy on Climate Change, which focuses, in general, on adaptation to climate change impacts. Strategy identifies areas for adaptation, such as agriculture, efficiency of land use and the human health, and aims to develop a capacity on extreme climatic events. It mandates the adoption of National Action

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<sup>36</sup> Fior, Damiano, *Tajikistan’s glaciers melting – far more than just a loss of ice*, Pathways to Resilience in Semi-Arid Economies, 2015. Available at <http://prise.odi.org/comment-tajikistans-glaciers-melting-far-more-than-just-a-loss-of-ice/>. (accessed 02.03.2016).

<sup>37</sup> *Climate change assessment*, Country Partnership Strategy: Kyrgyz Republic, 2013–2017, Asian Development Bank, pp. 3-5. Available at <http://www.adb.org/sites/default/files/linked-documents/cps-kgz-2013-2017-oth-02.pdf>. (accessed 02.05.2016).

Plans for adaptation and reduction of greenhouse gas emissions, which should be an integral part of future national programs and plans for social and economic development.<sup>38</sup>

Uzbekistan, as was mentioned above, has no targeted climate change policy instrument that could provide a strategic framework for national climate change adaptation or mitigation actions. Nevertheless, there are several environmental policies that cover a range of adaptation activities in the key socio-economic sectors.<sup>39</sup> In 1998, Uzbekistan has adopted National Strategy and Action Plan on Saving Biodiversity. This strategy defines preservation and protection of the biodiversity as a strong path towards sustainable development, as well as, sets adaptive measures to climatic changes.<sup>40</sup> First out of five goals of the strategy, is the protection of at least 10% of all ecosystem types in order to maintain nature and natural landscapes.<sup>41</sup> At present, the National Adaptation Plan of Action is being under development in Uzbekistan.<sup>42</sup>

Kazakhstan has not yet initiated any policies directly focusing on climate change adaptation. Nevertheless, few small scale programs have been adopted, such as the Desertification program for 2005 to 2015, which mandated changes in vegetation plantation that were applied in arid zones, and also outlined restriction on animal grazing to limit desertification. There also other adaptation policies in the agriculture, water resources, reducing desertification around the Aral Sea

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<sup>38</sup> National Climate Change Strategy of Turkmenistan, pp.13-14.

<sup>39</sup> RECCA, *Towards Paris 2015: What does a new global climate policy mean for Central Asia?* p.9.

<sup>40</sup> The Republic of Uzbekistan, Fifth National Report on Conservation of Biodiversity, 2015, p.8 Available at <https://www.cbd.int/doc/world/uz/uz-nr-05-en.pdf>. (accessed 02.05.2016). (Uzbekistan, Fifth National Report on Conservation of Biodiversity).

<sup>41</sup> Uzbekistan, Fifth National Report on Conservation of Biodiversity p.39.

<sup>42</sup> SCRUNP, *Climate Change: Priority Action Needs for Uzbekistan*, p.2.



aria.<sup>43</sup> At the moment of writing, Kazakhstan has been developing the National Strategy on Climate Change, where adaptation framework would be reflected.<sup>44</sup>

## 2. Mitigation

Albeit the shift of policies of Central Asian countries is obedient, mitigation efforts to climate change are reported being a dominant in the region.<sup>45</sup> Majority of the Central Asian countries' responses to climate change focus on mitigation measures. There are various factors for that, including financial flow and transfer of environmentally sound technologies from the international cooperation interested in mitigation efforts. For the purposes of generating financial resources from mitigation efforts, countries in the region create a favorable investment environment, and adopt mitigation related policies.<sup>46</sup> Central Asian countries that have submitted nationally appropriate mitigation actions (NAMA) to the UNFCCC include Tajikistan, Kazakhstan, and Kyrgyzstan.<sup>47</sup> Submitted NAMAs to the UNFCCC are strongly linked to climate change policies in each of these countries.

Four out of five Central Asian countries have adopted by the policy a national voluntary mitigation targets to reduce projected emissions, and have submitted to UNFCCC the Intended Nationally Determined Contributions (INDC). Kazakhstan submitted an economy-wide target of 15%-25% reduction in GHG

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<sup>43</sup> International Institute for Sustainable Development, *Review of Current and Planned Adaptation Action: Central Asia*, 2011, p. 24. Available at: [https://www.iisd.org/pdf/2011/Central\\_Asia\\_Adaptation\\_Action.pdf/](https://www.iisd.org/pdf/2011/Central_Asia_Adaptation_Action.pdf/). (accessed 02.05.2016).

<sup>44</sup> Report, *Kazakhstan's Priorities in Climate Change Process, Climate change coordination Center*, <http://www.climate.kz/eng/?m=html&cid=19>. (accessed 02.05.2016).

<sup>45</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p.42.

<sup>46</sup> Aguilar, Soledad (et al.) *Climate Law in Latin American Countries*, p.664.

<sup>47</sup> Kyrgyzstan's submitted NAMA to UNFCCC is yet at the stage of development.

emissions by 2030 compared to 1990. Tajikistan emissions profile differs from other Central Asian countries, as due to the transition to a market economy and independence the current level of emissions (8 million tonnes of CO<sub>2</sub>-eqv) has declined by two thirds compared to 1990 (25 million tonnes of CO<sub>2</sub>-eqv). Tajikistan aims a target of a reduction to 80 - 90 % of 1990 emissions levels without external financial assistance, and a reduction to 65 - 75 % subject to substantial international funding by 2030.<sup>48</sup> Turkmenistan aims to stabilize the GHG emissions or to start the reductions by 2030, which will allow the country to pursue a low or a zero-carbon development, compatible with the long-term global goal of not exceeding the 2-degree temperature increase. Turkmenistan also is projecting more potential for GHG emission reduction with substantial international funding.<sup>49</sup> Kyrgyzstan submitted target of 30 % economy-wide reduction compared to business as usual by 2030. Uzbekistan has not submitted its INDC to UNFCCC at the time of writing, and its national GHG reduction targets have been under the review and discussions in government. It is important to mention, that Uzbekistan is the only country where emissions have remained relatively stable since 1990 and slightly increased towards 2012 in around of 200 million tons of CO<sub>2</sub>-eqv.

To date, only Tajikistan, Kazakhstan and Kyrgyzstan have submitted the NAMAs to the UNFCCC. Submission is very helpful to identify key sectors for mitigation in the region, and sectors they would be working on to achieve their mitigation targets.<sup>50</sup> Tajikistan submitted the NAMA for forestry sector, which aims for a forest renewal, conservation, and sustainable management, contributing

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<sup>48</sup> Tajikistan INDC, p.1.

<sup>49</sup> Tajikistan INDC, p.5.

<sup>50</sup> Aguilar, Soledad (et al.) *Climate Law in Latin American Countries*, p.667.

to climate change mitigation that derives from its National Action Plan for Climate Change Mitigation. Other objectives under NAMA are to maintain biodiversity, improve the livelihoods of local people, and leverage public and private finance.<sup>51</sup> Kyrgyzstan as part of the institutional reform agenda submitted the NAMA to energy sector, with aims of supporting the reorganization of the local heating sector, which consists of a large number of small and an inefficient boiler houses, and a poor distribution system. The NAMA aims at combining the institutional reform with low carbon development goals along with the climate change related policies in Kyrgyzstan.<sup>52</sup> Kazakhstan submitted the NAMA project to [buildings](#), [waste](#), [transport](#), and [energy](#) sectors. The NAMA supports the identification, design, and implementation of mitigation actions in the urban sector, which consisting of investments in infrastructure supported by capacity building, awareness raising and technical assistance. It will contribute to the achievement of the country's targets of GHG emission reduction, as well as improving urban services and the quality of life. The project is the first effort in Kazakhstan to adopt a comprehensive approach to reduce GHG emissions in cities.

#### **IV. Regional, national and sub national responses to climate change**

##### **1. Regional**

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<sup>51</sup> *Tajikistan Forestry NAMA Support Project*, The Nationally Appropriate Mitigation Actions Facility, 2015, <http://www.nama-facility.org/projects/tajikistan.html>. (accessed 02.06.2016).

<sup>52</sup> Opitz, Petra, *NAMA development in Kyrgyzstan: insides from practical experiences*, Mitigation Talks, vol. 3 (4) and 4 (1), October – January 2013, pp. 28-29. Available at [http://www.teriin.org/projects/nfa/pdf/NAMAs\\_newsletter\\_2013.pdf](http://www.teriin.org/projects/nfa/pdf/NAMAs_newsletter_2013.pdf) . (accessed 02.06.2016).

Central Asian countries have been engaged in both regional and sub regional climate change related entities, such as the Eurasian Economic Union (EAEU),<sup>53</sup> the International Fund for Saving the Aral Sea (IFAS),<sup>54</sup> the Central Asian Regional Environmental Center (CAREC)<sup>55</sup>, the Interstate Commission for Water Coordination (ICWC)<sup>56</sup> and the Interstate Commission on Sustainable Development (ICSD)<sup>57</sup>, which significantly contribute to the development of policies on climate change related issues.

In 1992 by the heads of water resource related ministries of Central Asian countries was signed the Agreement on Cooperation in the Field of Joint Management on Utilization and Protection of Water Resources from the Interstate Sources, which lead to the creation of the ICWC. In 1993, in response to ecological catastrophe in Aral Sea and its socio-economic impacts, all the Central Asian countries founded IFAS, where ICWC was later integrated as a working body. The IFAS operates on common four strategic goals: stabilizing the environment of the Aral Sea Basin, rehabilitating the disaster area around the sea, improving the management of the international waters around the basin, and building the capacity of institutions both at the regional and national level.<sup>58</sup> The IFAS led to the foundation of the ICSD.<sup>59</sup> This Commission works on the harmonization of the legislative and methodological basis of environmental protection, as well as establishment of a regional data bank on protection of the

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<sup>53</sup> Out of five Central Asian countries, only Kazakhstan and Kyrgyzstan member states

<sup>54</sup> All five Central Asian countries are founders

<sup>55</sup> All five Central Asian countries are members

<sup>56</sup> All five Central Asian countries are members

<sup>57</sup> All five Central Asian countries are members

<sup>58</sup> International Fund for Saving the Aral Sea, <http://ec-ifas.org/en/>. (accessed 02.06.2016).

<sup>59</sup> Article 2 of IFAS statute envisaged creation of ICSD

environment and sustainable development. Under the auspices of the ICSD and with support of the UNEP, it was developed the first integrated “state of environment” assessment for the Central Asia, the Regional Environmental Protection Action Plan, and the Framework Convention for the Protection of the Environment for Sustainable Development in the Central Asia.<sup>60</sup> Founded in 2001, CAREC aims to promote multi-sector cooperation in addressing environmental problems in the Central Asia at the local, national, and regional levels.<sup>61</sup>

In general, the regional climate change policy responses show a positive sign of political willingness of countries to collaborate and enhance coordination in facing climate change related challenges. Nevertheless, only after 2010 these cooperation mechanisms have started focusing to climate change issues *per se*, identifying water resources, and environmental protection as key sectors. Climate change has recently been incorporated in the regional programs of IFAS as well as the relevant work of international organizations and development cooperation agencies in the region.<sup>62</sup> Moreover, within these institutions Central Asian countries have developed numerous climate changes related agreements, most of them, however, was not signed due to the different views in specific terms of agreements.<sup>63</sup>

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<sup>60</sup> The Interstate Commission on Sustainable Development, [http://ec-ifas.waterunites-ca.org/aral\\_basin/institutions/mkur/index.html](http://ec-ifas.waterunites-ca.org/aral_basin/institutions/mkur/index.html). (accessed 02.08.2016).

<sup>61</sup> The Regional Environmental Centre for Central Asia, <http://www.old.carecnet.org/about-carec/?lang=en>. (accessed 02.08.2016).

<sup>62</sup> *United nations environment programme/Regional Mountain Centre for Central Asia, Outlook on climate change adaptation in the Central Asian mountains*, Mountain adaptation outlook series, 2014, pp. 8-9  
[http://www.unep.org/roe/Portals/139/documents/Press%20Releases/AsiaFlyer\\_screen.pdf](http://www.unep.org/roe/Portals/139/documents/Press%20Releases/AsiaFlyer_screen.pdf). (accessed 02.08.2016).

<sup>63</sup> Maas, Achim/ Issayeva, Gulzhamal, Rüttinger, Lukas/ Umirbekov, Atabek/Raul Daussa, *Climate change and the water-energy- agriculture nexus in central Asia, scenario report*, Adelphi, 2012, pp.14-16. Available at [https://www.adelphi.de/en/system/files/mediathek/bilder/US%20524\\_Scenario%20Report\\_Central%20Asia\\_EN\\_Final.pdf](https://www.adelphi.de/en/system/files/mediathek/bilder/US%20524_Scenario%20Report_Central%20Asia_EN_Final.pdf). (accessed 02.08.2016).

## 2. National and sub national responses

Central Asian countries implement climate change related policies mainly through designated climate and energy related ministries and specialized agencies.<sup>64</sup> As previously was mentioned, Turkmenistan and Uzbekistan constitutions allocate shared responsibilities on environmental issues among the central government, provinces and municipalities. Their constitutions provide a good example of starting point to be applied by the other Central Asian countries to decentralize government administration's environmental competence in order to promote and strengthen the combat of climate change issues across the governmental sectors. Central Asian countries have been promoting environmental competence through adopting strategies on climate changes at sub national level. The Laws on Regional Governments of all Central Asian countries empower regional governments to generate regional strategies on environmental protection. For the guidance of regional authorities and back their decision makings, incumbent ministries and agencies for environmental issues have developed specific guidelines. For instance, to date between the Committee for Environment Protection of Tajikistan, and the regional authorities there have been adopted three environmental plans of action on recreation of irrigational systems for Hisor, Panj and Rudaki cities.<sup>65</sup> Yet, sub national responses to climate change issues of Central Asian countries are under development, countries are being

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<sup>64</sup> Constitution of Turkmenistan, art. 36 and 86, §2 and 4.

<sup>64</sup> Constitution of the Republic of Uzbekistan, art. 100, §4.

<sup>65</sup> Committee on the environmental protection of the Republic of Tajikistan, Development projects (Projekti po razvitiyu). [http://hifzitabiat.tj/?page\\_id=394](http://hifzitabiat.tj/?page_id=394). (accessed 02.09.2016).

attempting to decentralize the environmental competence and develop sub national climate change related strategies.<sup>66</sup>

Local governments throughout the Central Asia are in the process of development a climate change related regulations, such as reduction of GHG emissions, enhancement of adaptation and resilience, as well as monitoring and report on realization of projects. Particularly, some of the Central Asian cities have started participation in broader initiatives which avails them to adopt climate change related policies and receive financial supports for such efforts. For example, six cities of Central Asian countries adhered to the Covenant of Majors with voluntary commitment to meet and exceed the 20% CO<sub>2</sub> reduction objective through increased energy efficiency and development of renewable energy sources.<sup>67 68</sup> Among them two cities a Somoniyon city of Tajikistan and a Temirtau city of Kazakhstan have already submitted their action plans to the public registry which mandates the measures on increasing the energy efficiency, development of renewable energy sources as well as reduction of GHG emissions.<sup>69</sup> The city of Somoniyon has adopted overall of CO<sub>2</sub> emission reduction target in 23% by 2020 based on 2013 emission<sup>70</sup>, and the city of Taraz

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<sup>66</sup> Abt Associates and CLIMsystems, *Building Capacity for Climate Resilience*, Technical Assistance Consultant's Report, Asian Development Bank, 2013, p. 85. Available at <http://www.adb.org/sites/default/files/project-document/80301/45436-001-tacr.pdf>. (accessed 02.09.2016).

<sup>67</sup> The Covenant of Mayors is the mainstream European movement involving local and regional authorities in the fight against climate change. It is based on a voluntary commitment by signatories to meet and exceed the EU 20% CO<sub>2</sub> reduction objective through increased energy efficiency and development of renewable energy sources.

<sup>68</sup> The cities are Somoniyon of Tajikistan, Shopokov, Kerben and Orlovka og Kyrgyzstan, Temirtau and Taraz of Kazakhstan

<sup>69</sup> The list of cities that have signed up to the Covenant may be found [http://www.covenantofmayors.eu/about/signatories\\_en.html](http://www.covenantofmayors.eu/about/signatories_en.html). (accessed 02.09.2016).

<sup>70</sup> Sustainable Energy Action Plan Documents of Somoniyon city [http://www.covenantofmayors.eu/about/signatories\\_en.html?city\\_id=5938](http://www.covenantofmayors.eu/about/signatories_en.html?city_id=5938). (accessed 02.09.2016).

has a target to reduce 21% of overall CO<sub>2</sub> emission by 2020 based on 2012 emissions.<sup>71</sup>

## **VI. Conclusion: policy implementation, challenges and a way forward**

### **1. Policy implementation and challenges**

The effectiveness of any climate change related laws and policies depend on its implementation and enforcement. In this regard, allocation of budget for the implementation of specific climate change related instruments is of utmost importance for the enforcement of climate regulations. Although climate experts debate that to ensure budgetary allocation for climate change purposes it is needed an adoption of substantive climate change law than merely relying on flexible strategies,<sup>72</sup> the cases of Central Asian countries suggests that this is not necessarily always the case. There is no climate change law adopted in any of country in the region, yet lines on budget is allocated in the national developmental strategies and sectoral policies, or specific climate change related policies and/or programs. Problems are found rather on financing itself. Most of the countries in region report in their INDCs about having difficulties to allocate funds from national budgets, with relying heavily on international cooperation. It has been difficult for Central Asian countries to follow action plans derived from international conventions, which leads to marginal level of integration of climate

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<sup>71</sup> Sustainable Energy Action Plan Documents of Taraz city [http://www.covenantofmayors.eu/about/signatories\\_en.html?city\\_id=6365&overview](http://www.covenantofmayors.eu/about/signatories_en.html?city_id=6365&overview). (accessed 02.09.2016).

<sup>72</sup> Aguilar, Soledad (et al.) *Climate Law in Latin American Countries*, p.674.



change related objectives into the national planning process. Yet, Central Asian countries report to support the inclusion of climate change dimension in budgetary planning, albeit marginal. Governments, politicians, and experts have acknowledged the importance of enforcement and implementation by separate budgeted allocation into strategies and a policy, which shows a strong political enthusiasm, and have pledged in governmental level by numerous agreements that they will put effort to develop scientific knowledge to back their decision making.<sup>73</sup> For this reason, a mechanism of budgetary allocations in policy instruments has to be explored in order to understand to what extent these policies are enforced and implemented.

Kazakhstan has developed Green Economy Strategy for transition to a green economy. It is a strong climate change related policy which outlines strategic directions for national mitigation and adaptation actions.<sup>74</sup> The strategy envisages funding of below 2% of GDP in an average 0.7% of GDP for the period 2010 to 2049. The funding for greening the economy is estimated to be of US 100 billion. The fund would be mostly invested from state budgeted sources, with some minor investments from international financial assistance.<sup>75</sup> This strategy requires the achievement of green economy through specific sectoral programs, including such sectors as agriculture, industrial development, air quality, water resources,

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<sup>73</sup> Desai, Adarsh, Central Asian Countries Pledge Action on Climate Change, June 17, 2014. <http://www.worldbank.org/en/news/feature/2014/06/17/central-asian-countries-pledge-action-on-climate-change>.

<sup>74</sup> Shah, Jitendra/Rinnerberger, Nina/Murusic, Maja/Srivastava, Jitendra/Levine, Tamara Ashley, *Kazakhstan - Overview of climate change activities*, World Bank Group, 2013, p. 4. Available at <http://documents.worldbank.org/curated/en/2013/10/19185591/kazakhstan-overview-climate-change-activities>. (accessed 02.10.2016). (Shah, Jitendra/Rinnerberger, Nina/Murusic, Maja/Srivastava, Jitendra/Levine, Tamara Ashley, *Kazakhstan - Overview of climate change activities*).

<sup>75</sup> Ministry of Environmental Protection of Republic of Kazakhstan, *Concept for transition of the Republic of Kazakhstan to Green economy*, 21st OSCE Economic and Environmental Forum, 2013. Available at <http://www.osce.org/eea/104851?downloadtrue>. (accessed 02.10.2016).

waste management, and educational development. The strategy determines that all future new sectoral programs deriving from country's development plan shall be adjusted to climate change related issues, where a specific budgetary allocation mechanism is developed for the successful achievement of project goals.<sup>76</sup> Notwithstanding the significance of environmental budget allocation within national development policy, several areas have been identified for the urgent initial actions that could help Kazakhstan to mainstream climate considerations into development activities and planning better, as well as create public demand for climate actions. There is of utmost importance for Kazakhstan to estimate cost of inaction, along with other actions. Efficient assessment of climate change impacts and associated costs across vulnerable sectors is needed in order to provide compelling economic arguments in favor of climate action. This also would equip government with appropriate policy responses on the national and regional levels which are more likely to effect the reduction of GHG emissions. Local adaptive capacity would be also strengthened from the estimation of costs of inaction, which is no less important on the improvement of climate resilience.<sup>77</sup>

Kyrgyzstan climate change related policies and institutional frameworks represent a weak example from the perspective of budgetary allocations. State funding for environmental protection measures remains a key challenge. Although there are budgetary lines on strategies related to climate change, there is no concrete financial plan. For instance, there is a lack of substantive financial mechanism in the main climate related policy instruments, such as the National Environmental Action Plan, the Strategy on Sustainable Human Development, the

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<sup>76</sup> The main priorities in the Kazakhstan's Conception of Kazakhstan on transition to green economy. <https://strategy2050.kz/en/news/1211/>. (accessed 02.10.2016).

<sup>77</sup> Shah, Jitendra/Rinnerberger, Nina/Murusic, Maja/Srivastava, Jitendra/Levine, Tamara Ashley, *Kazakhstan - Overview of climate change activities*, pp. 14-15.

Biodiversity Strategy and Action Plan and National Agenda, and which therefore left not implemented efficiently. Most of climate related laws, on environmental protection, air protection, industrial and domestic waste, fauna are reported to be a mere framework acts, and are not well planed, resulting in weak implementation by incumbent ministries. The governance system on climate issues at all levels such as at the state, regional, and local levels remain unclear, impeding effective integration and cooperation mechanisms. In the Country Development Strategy there was envisaged a \$10.6 million of financing for environmental purposes, which supposed to be included in the Medium-Term Budgetary Framework for the timeframe of 2007–2010, however, a responsible agency for environmental issues was not included in the list of ministries who would be making proposals for policy consideration.<sup>78</sup>

In Tajikistan number of national development strategies, as well as climate change related strategies, programs and plans have been adopted with lines on budget respectively, nevertheless, financing mechanisms have not been secured, leaving the instruments not implemented at their full capacity.<sup>79</sup> For instance, article 3 of State ecological program for 1998-2008 has had envisaged financing from the state budget, including the budgets of ministries and local authorities, however, budget planning for entire program was not substantively calculated, thus not achieving all goals of the program. Foreign financial assistance plays a dominant role on financing climate change related policies, reflecting the fact that only modest resources have been made available from a state budget and a state

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<sup>78</sup> United Nations, *Kyrgyzstan: Second review: Environmental performance reviews 28*. p.92.

<sup>79</sup> National Action Plan of the Republic of Tajikistan for Climate Change Mitigation, p.137. <http://unfccc.int/resource/docs/nap/tainap01e.pdf>. (accessed 02.09.2016).

environmental funds.<sup>80</sup> Due to the weak implementation of policies, it is difficult to assess the accomplishment of planned actions, whereas, it could be vital to assess and evaluate the results of already adopted strategies and actions plans for adoption of a new policy in the first place.<sup>81</sup> Most important climate change related laws and policies have been adopted, and more are being under the development in Tajikistan. For their efficient implementation, a strong and detailed secondary legislation is needs to be adopted. Lack of secondary legislations could lead to contradiction between different laws and policies, and inter sectoral misunderstandings which impede implementation and development of laws and policies. Moreover, Tajikistan and Kyrgyzstan national authorities lack a capacity for comprehensive climate change related law-making. Introduction of environmental and climate change law courses in the curriculum of all law schools, legal departments of universities, and other related education departments could improve the knowledge capacity. The status of environmental authorities in a mere agency level is low, and weakens the managements and enforcement of environmental issues at the national level.<sup>82</sup>

Turkmenistan insofar is the only country in the region to adopt the National Climate Change Strategy. This strategy mandates to establish the National Clean Climate Fund.<sup>83</sup> Budget of the fund is formed from various

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<sup>80</sup> United Nations, *Tajikistan: Second review*, Environmental performance reviews, United Nations Publications, 2012, p.77-78. Available at <http://www.unece.org/environmental-policy/environmental-performance-reviews/enveprpublications/environmental-performance-reviews/2012/2nd-environmental-performance-review-of-tajikistan/docs.html>. (accessed 02.09.2016). (United Nations, *Tajikistan: Second review*, Environmental performance reviews.).

<sup>81</sup> United Nations, *Tajikistan: Second review*, *Environmental performance reviews*, p.25.

<sup>82</sup> United Nations, *Tajikistan: Second review*, *Environmental performance reviews*, p.26.

<sup>83</sup> National Climate Change Strategy of Turkmenistan, p.14.

sources including state budget and foreign assistance.<sup>84</sup> Turkmenistan expenditures on climate change related issues are reported to be large, which implies the implementation of financial statements of climate change related policies. The sufficiency of effectively addressing all major climate issues, however, is difficult to assess as publicly available information on actual domestic environmental expenditures is marginal. Unlike other countries in the region, Turkmenistan finances its climate actions mainly from the revenues of hydro carbon resources trade, and dependence on international financial assistance is at moderate rates.<sup>85</sup> Moreover, in Turkmenistan has been created the Public Interdepartmental State Commissions for the effective implementation of climate related policies. It is reported that, however, its performance is weak due to the insufficient exchange of information and data. Nevertheless, current legal framework lacks the important secondary rules and policies, which could have allowed the effective performance of climate change policies. It must be mentioned that in 2011 government created the Working Group on Improvement of National Environmental Legislation and developed a detailed working plan on the introduction of modifications to existing laws and the preparation of new necessary draft laws.<sup>86</sup>

As was mentioned before, Uzbekistan has no concentrated policy on climate change, which could have provided the strategic basis for national

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<sup>84</sup> United Nations, *Turkmenistan: First review*, Environmental performance reviews, United Nations Publications, 2012, p.41. Available at [http://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/Turkmenistan.pdf](http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/Turkmenistan.pdf). (accessed 02.10.2016). (United Nations, *Turkmenistan: First review*)

<sup>85</sup> United Nations, *Turkmenistan: First review*, p.52.

<sup>86</sup> United Nations, *Turkmenistan: First review*, pp.19-20.

adaptation and mitigation actions.<sup>87</sup> Nevertheless, in Uzbekistan funding of climate related policies has been rapidly increasing in the last decade. Financial instruments available for climate change related issues is provided by the system of regulatory and economic instruments from emission charges (air pollution, wastewater discharges and waste disposal), user charges, taxes on the extraction and use of natural resources and penalties and compensation for environmental damage. The Law on Nature Protection provides a legal basis for financing, where Article 33 of the Law lists all these instruments, including the possibility of using tax advantages and credit subsidies for the introduction of resource saving technologies. This Law establishes a basis for the creation of funds for environmental protection at both state and local levels. The fund revenues are accrued from state budgeted, revenues of the system of local funds, incomes from participation in enterprises, the voluntary contributions, and publishing activities, as well as from the fines and claims for the environmental damages.<sup>88</sup> Although the system of environmental funds has proven its role as a reliable source of funding for climate change related issues, the policy effectiveness analysis is difficult due to the low transparency of activities and methodological work.<sup>89</sup>

This paper analyzed the main trends regarding climate change law in Central Asia, illustrating many layers of regulation currently in place, mitigation, and adaptation objectives, and the mixture of approaches in which countries response to climate change impacts in the region. Among the main developments,

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<sup>87</sup> Shah, Jitendra, *Uzbekistan - Overview of climate change activities*, World Bank Group, 2013, pp. 4-7. Available at <http://documents.worldbank.org/curated/en/2013/10/19184510/uzbekistan-overview-climate-change-activities>. (accessed 02.10.2016).

<sup>88</sup> United Nations, *Uzbekistan: Second review*, Environmental performance reviews 28, United Nations Publications, 2010, p.69. Available at [https://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/uzbekistan%20II%20e.pdf](https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/uzbekistan%20II%20e.pdf). (accessed 02.10.2016). (United Nations, *Uzbekistan: Second review*).

<sup>89</sup> United Nations, *Uzbekistan: Second review*, p.83.

none of Central Asian country has a substantive climate change law. Most of the Central Asian countries have incorporated climate change priorities in their national development plans and/or specific climate change strategies and are implementing them through the adoption of sectoral programs and specific action plans. These strategies diverge in scope and in terms of their adoption process, nevertheless, provide guidelines for policy makers' decision making processes. Strategies have lines on budgetary allocations, however, they lack of secondary legal frameworks, substantive mechanism of financing, enforcement and monitoring. Some countries are undertaking actions to enhance mainstreaming of climate change priorities into relevant public sectors, inter alia, adoption of sectorial strategies, and the integration of climate change into national development plan's main concern. Countries differ in their approach to tackle climate change issues, with some interesting approaches presented by those that decentralize the government's competence in their respective constitution by embodying local authority to define measures for rational use of natural resources and environmental protection. Also, they have adopted numerous adaptation and mitigation plans at the sectoral level. Incorporation of climate change related issues into mid and long term national development plans is increasingly taking place by countries, with further progress of mainstreaming adaptation and mitigation measures throughout the sectors and/or adopting a separate climate change strategies. The transition from a focus on mitigation in initial stage, to an adaptation at present stage, of legislation developments has also been found. Adaptations measures have become a priority in climate change policy due to the regular extreme events from climate change impacts, causing human and economic damages. Nonetheless, mitigation legislation maintains not the least

part of climate change legislation, and concerns on creating favorable investment environment for tackling environmental issues and adopting the economy-wide mitigation targets are at place. Over the last decade there have been significant progresses made by adopting climate change related strategies and policies at national level, and complemented by regional organization that have adopted strategies for joint cooperation. Finally, the implementation is less intense as governments are reporting serious shortage of funds from state budgets for adaptation and mitigation measures, particularly in Tajikistan and Kyrgyzstan. Over the few years climate change related legislations in Central Asia have been developed rapidly. Whilst initially mainly focused on mitigation, adaptation measures due to the strong impacts of climate change in region has been strengthening as well. The enforcement mechanism backed with financial frameworks that could trigger implementation, however, is not ample.

## **2. A way forward**

The assessment shows that in one hand climate change impacts different socio-economic sectors of countries in the region, thus increasing the risks for development. Countries have been adopting laws and policies in response to climate change impacts, nevertheless, these instruments are not ample due to the inefficient financial frameworks in enforcement mechanisms. On the other hand GHG emissions vary country to country, with Tajikistan and Kyrgyzstan are mostly producing energy from renewable energy resources, whilst Kazakhstan, Turkmenistan, and Uzbekistan are mostly relying on hydrocarbon natural resources. Therefore, there is no one-size-fits-all approach on legal and policy



responses to climate change. Different country has different energy production system, and regions suffer different consequences from climatic changes, and response measures may be very different due to variations in geography, land use, social, cultural, and economic factors.

Nevertheless, the assessment shows climate change impacts are significant, in response a comprehensive adaptation laws and policies at national and regional level should be adopted. Comprehensive laws and policy could be developed through generation of data on the effective impact of different legal and policy responses based on empirical approach on analyzing climate change adaptation. Moreover, efficient regulatory instruments are needed to be developed that efficiently would help to prevent, minimize, or recover from the damage caused by an extreme weather event or incremental climatic change. Measures can include ‘command-and-control’ instruments for prohibitions, licensing schemes, and planning tools among others. These measures could be build in regulatory measures for a wide range of different vulnerable sectors and activities, including land use planning, biodiversity conservation, natural resource management, and emergency management. The practice of economic measures such as taxes, emission trading schemes and financial or administrative incentives for desirable behavior has become in place among some of countries in the world, as well as in Central Asia. Such instruments could be incorporated in different socio-economic sectors such as flood mitigation, coastal management, and management of local infrastructure assets, depending on the kind of sectors of country in the region.<sup>90</sup> These anticipatory actions would require a funding and financial mechanism. A greater adaptation economic and financial mechanisms needs to be researched and

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<sup>90</sup> McDonald, Jan, *The role of law in adapting to climate change*, p. 285.

utilized.<sup>91</sup> These mechanisms should be developed significantly and in all details as they would attract foreign funds in adaptation measures, as well as avail countries to implement laws and policies effectively. Since countries in the region are concerned of heavy financial burden, local-level authorities can also offset costs from state budget on to developers and rate payers. Also, the introduction of a mandatory insurance scheme that would require all properties to carry cover for extreme weather event or natural disasters can reduce the risk of such cover for insurers and retain access to compensation for loss and damages, thus avoiding the cost and uncertainty of litigation. It is highly likely that claims for compensation will be filed in the future by individuals and businesses that have suffered loss as a result of extreme events. Climate change litigation is beyond the scope of this article. Laws and policies must be designed, revised, implemented, and enforced based on the actual impacts of the climate change in order to enhance the adaptability to climatic and natural uncertainties and rapid changes. It will minimize the damage and social inequities caused by the uneven climatic effects, otherwise climate change may pose an unprecedented challenge to adaptation laws and policies that will influence their choice, design, and timing.<sup>92</sup> Laws and policies should be ‘elaborated in the participatory and transparent and science-based process, providing a clear vision of adaptation options, priorities and feasible tools of their enforcement and taking into account the transboundary context’.<sup>93</sup> At regional level, adaptation laws and policies should be based not solely on the political boundaries and economic interests, ‘but also on the ecosystem approach to climate change adaptation - a strategy for maintaining and

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<sup>91</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p. 65.

<sup>92</sup> McDonald, Jan, *The role of law in adapting to climate change*, pp. 286-288.

<sup>93</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p. 65.

enhancing ecological goods and services, which may become increasingly important to society in the face of climate change.<sup>94</sup> These adaptive measures require scientific knowledge. Laws and policies should facilitate grounds for research on adaptation through strengthening the capacity of local scientific institutions in climate impact modeling, whose are researching in such sectors as water, agriculture, and disaster management and other socio-economic sectors. Legal and policy frameworks on establishing greater climate change data sharing between both institutions and government authorities at national and regional levels should be adopted. Effective laws and policies should be developed on preparatory adaptation measures, which could include capacity building to respond to the extreme events, ‘knowledge and information exchange, environmental education at various levels, multi-stakeholder dialogues, advancement in early-warning systems as well as promoting economic and market-based management tools and incentives’.<sup>95</sup> The process of making laws and policies on adaptation shall facilitate a forum of better public consultation or a new form of adaptation assessment process where diverse communities share their opinions and explicitly address the social justice implications of climate change effects. Adaptation laws and policies shall incorporate principles of ‘good environmental governance and sustainable development—precaution, public participation, polluter pays, proper valuation of resources, intra-generational, and inter-generational equity—should underpin the design of adaptation laws’.<sup>96</sup> Climate change is not completely predictable, and goes beyond human and institutional experience. Climatic shifts can render even these

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<sup>94</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p. 65.

<sup>95</sup> RECCA/APAN, *Gap Analysis on Adaptation to Climate Change in Central Asia*, p. 65.

<sup>96</sup> McDonald, Jan, *The role of law in adapting to climate change*, p. 291.

approaches to law-making inadequate, and laws ones adopted in the past may become not useful in the future. Then it would be important to make certain that stability, predictability, and even-handedness that laws and policies afford do not hold back reform where it is required.<sup>97</sup>

Key Words: Central Asia, Climate Change, Constitution, Policy, Mitigation, Adaptation. United Nations Framework Convention on Climate Change, **Nationally Appropriate Mitigation Actions**, *Intended Nationally Determined Contribution*.

I. B

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<sup>97</sup> McDonald, Jan, *The role of law in adapting to climate change*, p. 291.

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