

Final Report 2009-2011

Climate Change, Economic Growth, and Conflict

2. The "**Executive Summary**" concerns the content and results of the research. It should include the following information:

-The research plan (problem statement, general objective, hypotheses, research methods, schedule, etc.);

The assessment reports of the Inter-governmental Panel on Climate Change (Intergovernmental Panel on Climate Change 2001; 2007) and the Stern Review (2007) argue and convincingly demonstrate that human activity contributes in substantial ways to environmental change. Environmental change in turn has a plethora of different far-reaching outcomes today and in the future – some of which may affect human livelihood directly via welfare, some of which may affect human livelihood indirectly, e.g., migration. That is, environmental change could exacerbate the scarcity of renewable resources such as freshwater, may trigger mass population migration due to extreme weather events, desertification and rising sea-levels, and it may thus increase the risk of conflict between and within countries with different intensities at any level.

Hence, it does not come as a surprise that many high-ranking policy-makers¹ and various scientists² fiercely claim that environmental change, and climate change in particular, breeds violent conflict. Despite these claims, however, even a cursory review of the existing scientific literature reveals that there is rather little consensus³ on the climate–conflict relationship. A better understanding of whether or not, and if so under what conditions climatic changes contribute to violent conflict is very important not only for scientific reasons, but also because of its policy-implications. If climatic changes do indeed contribute to violent conflict, this is (or perhaps would be) of course a powerful argument in favor both of drastic cuts of emissions of greenhouse gases and providing climate adaptation support to vulnerable countries, which are often also the poorest ones. The recent Himalaya glaciers episode of the IPCC reminds us, however, that we need robust scientific evidence when advocating costly policies. In addition, a better understanding of pathways leading from climate change to conflict (to the extent they exist) can help in avoiding or reducing, through appropriate policies, conflict promoting effects of climate change.

We revisit the environmental change–conflict nexus along the following lines:

First, at the theoretical level, while most of the existing literature empirically tests the climate–conflict hypothesis in the form of a direct relationship, we submit that climatic changes are likely to affect the potential for violent conflict primarily via a) their negative

¹ For instance, UN Secretary-General Kofi Annan stated in 2006 that climate change is a ‘threat to peace and security’; and his successor, Ban Ki-Moon, argued in 2007 that ‘The Darfur conflict began as an ecological crisis, arising at least in part from climate change.’ US President Obama stated in 2009 that ‘The threat of climate change is serious, it is urgent and it is growing...The security and stability of each nation and all peoples – our prosperity, our health, our safety – are in jeopardy. And the time we have to reverse this tide is running out.’

² For example Burke et al. (2009: 20670) in a recent article conclude: “We find strong historical linkages between civil war and temperature in Africa, with warmer years leading to significant increases in the likelihood of war. When combined with climate model projections of future temperature trends, this historical response to temperature suggests a roughly 54% increase in armed conflict incidence by 2030, or an additional 393,000 battle deaths if future wars are as deadly as recent wars”.

³ For critical reviews, see Buhaug et al. 2010, Salehyan 2008, Nordas and Gleditsch 2007, and Gleditsch 1998.

effects on economic growth; and b) their interaction with the relative power of the relevant actors. In addition we examine whether environmental degradation affects migration. Second, at the methodological level, we employ appropriate econometric procedures to test our causal arguments. We also deal with the endogeneity/simultaneity problem in the climate – civil conflict relationship that has plagued the existing literature by introducing a new measure of climate that is exogenous to civil conflict and also takes into account the adaptation of production to persistent climatic changes. Finally, we use hydrological data to compute the effects of climate change on interstate conflict potential.

Theoretical arguments

A. Climate change, economic growth, and civil conflict

In this part of the project we examine whether climatic changes affect the probability of civil conflict through their effects on economic growth. We focus on economic growth because climate change may a) cause general economic disruption that reduce consumption, and b) necessitate costly adaptation measures to protect against future adverse climatic conditions and extreme weather events that reduce investment.

We further posit that reduced economic growth due to climate change may increase the risk of civil conflict because of a) the low opportunity cost of rebellion (i.e., individuals' expected returns from peaceful employment, say farming, compared to joining criminal and insurgent groups are lower); and b) the weaker state capacity to "invest in people" (i.e., state is unable to provide better nutrition, schooling, and on-the-job training that would lead to improved living conditions) and to "provide for the people" (i.e., state is unable to sustain peace through the maintenance of law and order). Hence our theoretical argument specifies the causal pathway leading from climate change through economic growth to civil conflict, and our empirical analysis is designed to test this two-step causal argument.

Finally, we submit that political system characteristics can mediate conflict-promoting effects of sluggish economic growth. We posit that democratic institutions that 'restrain the dark side of self-interest', such as a constrained executive and separation of powers, an independent judiciary and courts, as well as the rule of law and secure property rights collectively work to reduce the risk of conflict. By implication, we propose a politically moderated relationship between climatic conditions, economic performance, and conflict (CEC) and argue that democratic systems are likely to be better equipped for avoiding violent conflict when climatic changes reduce economic growth.

B. Climate change, power parity, and conflict

In this part of the project we examine whether climate induced dissatisfaction and the power capabilities of contenders increases the likelihood of conflict. Our argument is based on the logic of Power Transition Theory (PTT) which states that interstate conflict arises when actors have an opportunity (i.e., there exists power parity between contenders) and a motive (the contenders are dissatisfied with the status quo). In particular PTT holds that peace is most likely to be maintained in the international system when the dominant state has a clear preponderance of power because the outcomes of potential conflicts are clear, and states will settle disputes before they escalate to war. Power-preponderance thus suggests that when capabilities are roughly equal, the states involved may both perceive a reasonable chance of winning, leading to an increased probability of disputes and escalation to war. For war to occur the PTT also requires that the challenger is also dissatisfied with the status quo. Accordingly, it is a general dissatisfaction with its position in the system, and a desire to redraft the rules by which relations among nations work, that provoke a country to begin a war (Organski and Kugler 1980; Organski 1958).

We apply the logic of Power Transition Theory to both interstate and intrastate conflict.

Ba. Intrastate conflict

We argue that environmental problems such as floods, droughts, temperature increases, or precipitation variability can act as “stressors” that endanger individuals’ well-being due to decreases in their personal income from production and/or lower chances for future employment. In such cases, individuals might become increasingly discontented by the widening gap between their actual level of economic achievement and the level they feel they deserve. Moreover some groups are likely to be more dissatisfied (frustrated) than others because elites will use their power to maintain their standards of living despite the declining economic conditions. At some point, the dissatisfaction of these groups may cross a critical threshold, i.e., a ‘threshold of dissatisfaction,’ and they will seek to address their dissatisfaction by challenging the government. However, dissatisfied groups will seek to challenge the government in order to redraft the rules by which the distribution of benefits should be determined only if they have some reasonable chance to win, that is, if their power is close to the power of the government. Consequently, we hypothesize that civil conflict is more likely when the rebels’ power approximates the power of the government and the rebels are dissatisfied due to the prevailing climatic conditions.

Bb. Interstate conflict

To study environmental change and interstate conflict inter-linkages, we develop a formal hydro-climatological model for transboundary freshwater resources. We investigate theoretically how climate change translates into potential for conflict and peace, contingent on configurations of power between riparian states (the hydro-political conflict model (HCM)). Our point of departure is the observation that water allocation decisions based on economic criteria always take place within a basin-wide collective decision-making space, even in non-cooperative regimes. The model accounts for how upstream countries exercise power by using water whereas downstream countries use power to obtain water. The presence of a potentially powerful downstream country that can excerpt a threat towards the upstream state, contingent on her ability to project power, implicitly leads the upstream to adjust her water allocation decisions so that downstream dissatisfaction is less pronounced as compared to the case where the upstream country is the only basin player. We show that equilibrium water allocation outcomes are biased towards the more powerful riparian and that absolute upstream or downstream river basin dominance (power preponderance) are limiting cases of our general model. Our model suggests that the basin-wide conflict potential is always more sensitive to changes in relative power between riparian states than to impacts from climatic changes.

C. Environmental degradation and migration

Since many weather-related events such as floods, droughts, hurricanes and desertification have led to considerable internal and international migration flows in various instances, most of the existing scientific literature on ‘environmental migration’ regards the environment-migration nexus as self-evident. However, such case specific pieces of evidence do not allow for more general conclusions with respect to whether and how environmental degradation affects migration. The main reason is that although migration can be a survival strategy for people confronting environmental disasters or problems, still it is not the only available strategy. In this part of the project we contribute to the environmental migration literature by developing a theoretical argument that links different types of environmental problems – notably short- vs. long-term problems – as well as individual perceptions of environmental changes to decisions to migrate or stay.

We argue that migration is not an automatic response to environmental problems, but rather context-specific, in that the characteristics (sudden vs. slow-onset) and duration (rapid vs. long-term) of an environmental event should influence a person’s decision to migrate. Sudden and rapid environmental events such as floods, tornadoes and hurricanes can have severe impacts – at least in the short run – on the well being of a certain individual. However, given that migration is a costly adaptation strategy and that individuals are likely to be satisfied with

their current location because they are tied to this location by lifestyle, bonds to other people, culture, social traditions and identity, the individual is more likely to see such events as transitory – even if these events are highly destructive – and try to adopt alternative strategies to overcome the hardship of such events, postponing thus the decision to migrate. Consequently, we expect that sudden and rapid events will not significantly affect a person's decision to migrate.

On the other hand, slow-onset and long-term environmental events such as droughts and desertification are likely to have a smaller impact on the well being of an individual because the individual is likely to adjust her productive strategies over time to environmental change (for instance through investments in irrigation systems, use of drought resistant agricultural varieties, or diversification of her income sources). Therefore, we expect that slow-onset and long-term environmental problems will not increase the probability of migration because affected individuals are more likely to have taken the necessary measures to cope with and adapt to them.

Furthermore we argue that it is not environmental change per se that is important for a person's decision to migrate but rather individual perceptions of environmental change. The reasons are: first, environmental problems are likely to have asymmetric impacts across the affected population. In addition, what counts as an environmental problem is relative. Finally individuals within any given population possess a wide and variable range of capacity to adapt to or cope with environmental stresses. In addition, the range of adaptive/copying options varies from one individual to the next, depending for example on the work skills, financial assets and other attributes of the individual such as age, sex, health and education. Thus, perceptions of environmental degradation depend not only on the individual's exposure to the particular environmental event but also on her adaptive capacity. Consequently, we expect negative perceptions of environmental degradation to have a significant positive effect on migration because they affect individuals' relative level of satisfaction with the current location.

D. We also assess the neo-malthusian claim that climatic changes can lead to militarized interstate disputes in particular in cases involving water allocation in international catchments shared by poorer, less democratic, and politically less stable countries, governed by weak international water management institutions, and exposed to severe climatic changes. We focus on the Syr Darya river basin in Central Asia because it corresponds quite well to all above mentioned characteristics and consequently, if the neo-malthusian conjecture of conflict over water is empirically relevant, we should see signs of this in the Syr Darya.

Research methods

The empirical evaluation of our hypotheses is based on quantitative large-N techniques, a case study as well as numerical solutions.

A. To test our argument on the climate change-economic growth-civil conflict relationship we employ a two-stage procedure and use panel data from all countries of the world in the time period 1980-2004. To estimate the effects of climatic variability on economic growth we employ OLS with PCSE and fixed effects vector decomposition (fevd) estimator which allows us to include time invariant variables alongside country fixed effects (we also evaluate the robustness of our results using a fixed effects procedure). To estimate the effects of climate induced economic growth on the likelihood of civil conflict we employ logit regression with bootstrapped standard errors.

Data for economic growth come from the Penn World Tables Version 6.2 (Heston et al. 2006). We use data on civil war onset from UCDP/PRIO's Armed Conflict Dataset (see Gleditsch et al. 2002). Our data sources for climate variability are the Global Precipitation Climatology Centre (GPCC) (Beck, Grieser and Rudolf, 2004), and the Climatic Research

Unit (Mitchell and Jones, 2005) for precipitation; and CRUTEM3 (Brohan et al., 2006) and the Climatic Research Unit (CRU) (Mitchell and Jones, 2005) for temperature. As a robustness check we use the Standardized Precipitation Index (SPI6) (McKee et al. 1993). Our indicator for democracy is based on the combined Polity score from the Polity IV dataset. Since the competitiveness of participation component makes explicit reference to civil conflict (Vreeland, 2008), we use the xpolity data by Vreeland (2008), which excludes the participation dimension of the original polity IV data. We also check the robustness of our results using the original Polity IV index (Marshall and Jaggers, 2004). We also include several control variables such as initial income (convergence), log of GDP per capita, population growth and log of population, ethnolinguistic fractionalization, mountainous terrain, oil, and regional dummies.

An important contribution of our project to the existing research is the measure of climate change. In the existing literature, most studies use levels of rainfall and/or growth in rainfall (e.g. Miguel et al., 2004; Hendrix and Glaser, 2007; Brückner and Ciccone 2010) and precipitation/temperature deviation from the sample mean (i.e. Buhaug, 2010; Hendrix and Salehyan, 2012). However, all these measures have serious shortcomings. Growth in rainfall is mean reverting; levels of rainfall are endogenous to production structures; and precipitation/temperature deviation from the sample mean contains climatic conditions. Our climate variability is defined in terms of the deviation of the current level of precipitation and temperature from their past, long run level (defined as a 30 year moving average of past values). This measure takes into account the fact that choices of crops, methods of cultivation, and choices regarding other social and economic activities and structures could be affected by climatic conditions. To the extent that such choices are optimal for a particular climate (precipitation, temperature) it should be deviations from the normal climate (climate variability) that matter for economic activity. High rainfall levels in a region adapted to dry weather conditions could be as detrimental as low rainfall in regions adapted to wet conditions. This adaptation argument suggests that climate change is likely to have effects similar to those of climate variability if it occurs at a pace that is too fast to allow for suitable adjustment in production.

Ba. For empirically testing our argument of the interaction effect of climate induced dissatisfaction and power parity among the contenders on civil conflict, we again use data for 1980-2004. We use logistic regression models with standard errors clustered on country to correct for the bias due to non-constant variances and for taking into account intra-group correlations. With the exception of the power parity variable all other variables included in our econometric models are the same as above. We operationalize power parity with the excluded groups' size relative to the size of the included group(s) in a given country. The data come from the Ethnic Power Relations (EPR) data set (see Wimmer et al. 2009; Cederman et al. 2010), which contains information on included and excluded ethnic groups' size within a specific country. Included/excluded ethnic groups are defined by ethnicity and their access to power. More specifically, excluded groups (largely) lack access to executive power, i.e., representation in the presidency, the cabinet and senior posts in the administration, including the army. Ethnic groups are also excluded if they are discriminated, powerless, or have regional or separatist autonomy. In turn, included ethnic groups have executive power, are not discriminated, and do not have to rely on sub-state regional or separatist autonomy.

Bb. To gain important insight from our hydro-political conflict (HCM) regarding conflict potential as a function of hydro-climatology and preponderance of power we resort to numerical solutions. We examine two typical cases: Case 1: upstream country is wet, has low economic productivity, and is weak. On the other hand the downstream country is dry, economically productive as well as powerful (examples are: Amu and Syr Darya in Central Asia as well as the Blue Nile River Basin in north-eastern Africa); and Case 2: the upstream country is wet, economically strong as well as powerful, while the downstream country is dry

and subservient to upstream interests (examples are: Euphrates and Tigris rivers, the Rio Grande River and the Indus River). We use spatially disaggregated data for global average evapotranspiration (with 0.5 x 0.5 degree resolution) and precipitation (2.5 x 2.5 degrees resolution) from 1990-2000. Data for precipitation come from the Global Precipitation Climatology Project, GPCP V2.1 (Adler et al., 2009); data for evapotranspiration come from Jung et al. (2010). We use the Composite Index of National Capability (CINC) from the Correlates of War project to operationalize the relative power of the upstream/downstream countries.

C. To test the environmental degradation-migration nexus we employ logistic regression models and use micro-level survey data based on a uniform questionnaire of 455 migrants and 149 non-migrants from 16 countries⁴ collected by the European research program EACH-FOR (Environmental Change and Forced Migration Scenarios)⁵. The data we received from EACH-FOR were raw survey data, which we then used to code several new variables employed in this analysis, for example whether an individual reported that environmental problems were present at last/current location and in case an environmental problem was present, whether the respondent described it as a long-term environmental problem. We also use exogenous data on environmental shocks and degradation such as floods and droughts which come from the EM-DAT/OFDA/CRED International Disaster Database⁶. This approach allows us to differentiate between 'real' environmental problems and perceived environmental degradation. Following recent explanatory models of migration, we also include a dummy variable capturing whether another family member migrated before and whether a person comes from a rural background. Finally we control for gender, age, and the duration a respondent lived (in months) at the previous location (for non-migrants, the value of this variable is equal to their age in months).

D. To assess the neo-malthusian claim that climatic changes can lead 'water wars', we examine, ex post, international water allocation problems and institutions in the Syr Darya and, ex ante, whether climatic changes are likely to make existing international tensions worse in future. Our analysis was based on hydrological data and information collected through interviews and other open data sources such as COW and Polity IV.

- The results obtained and an analysis of them:

Our results suggest that

a. climate variability, measured as deviations in temperature and precipitation from their past, long-run levels (a 30 years moving average), does not affect violent civil conflict through economic growth. This finding is important because the causal pathway leading from climate variability via (deteriorating) economic growth to conflict is a key part of most theoretical models of the climate-conflict nexus. Nevertheless, the results offer some, albeit weak, support for the argument that climate induced economic growth can have an effect on civil conflict primarily in non-democratic countries.

b. Climate induced dissatisfaction also does not affect the likelihood of either intrastate or interstate conflict. In particular, our econometric analysis of intrastate conflict shows that it is not climatic conditions that lead to civil conflict but rather the power parity between the rebels and government forces. This result is in line with the Kvaløy et al (2012) study who find on the basis of world-wide public opinion data that although there is widespread concern about

⁴ These are Bangladesh, China, Ecuador, Egypt, Haiti, Kazakhstan, Kyrgyz Republic, Mexico, Morocco, Mozambique, Niger, Tajikistan, Turkey, Tuvalu, Vietnam and Western Sahara.

⁵ For more detailed information on the questionnaires, c.f.

http://www.each-for.eu/index.php?module=project_outline

⁶ www.emdat.be

global warming, still this concern is lower in countries that are expected to be more seriously affected, than in countries that are not expected to be seriously affected by climatic changes. Similarly, our numerical analysis of six real-world basins (Blue Nile, Indus, Amu Darya, Syr Darya, Euphrates-Tigris and Rio Grande) shows that while some of these rivers have an extraordinarily high conflict potential due to climate induced dissatisfaction regarding water availability/allocation, still these river basins are expected to be stable (i.e., the riparians have little inclination to go to war over access and distribution of freshwater resources) because of the existence of a power preponderant state.

c. We find that “real” sudden-onset as well as longer-term environmental problems, such as floods and droughts, are not significantly associated with migration choices. In contrast, individual perceptions of environmental degradation play an important role. This result lines up well with the argument that environmental degradation can have very asymmetric effects on people. While some persons may have the capacity to adapt, others regard a given environmental problem as a threat to their livelihood. Our results also show that individuals tend to respond to long-term environmental problems with adaptation, rather than migration. People prefer adaptation over migration when facing long-term environmental problems and/or when perceiving environmental problems, but only if they are socially bonded to their current location.

d. Our case study analysis of the Syr Darya river basin reveals that the only existing international water management institution in the Syr Darya has failed. We also find that climate change induced shifts in river runoff, to which the Uzbek part of the Syr Darya catchment is particularly vulnerable, and which could contribute to a deterioration of already strained Kyrgyz-Uzbek relations, are likely to set in only in the medium to long term. Our findings, thus, suggest that a climate change induced militarized interstate dispute over water resources in Central Asia is unlikely. This leaves some time for the riparian countries to set up an effective international framework for water allocation and prevention of climate-induced geohazards.

-A summary indicating whether the results obtained correspond to those expected at the beginning of the research;

Since our research aimed at thoroughly evaluating the neo-malthusian argument advanced by several scientists and policy makers that climate change leads to conflict, and that environmental degradation induces migration, our *a priori* expectations did mirror these claims. Contrary to our expectations, however, our results derived from our work largely go against these expectations (see above).

- Information regarding the practical application of results;

In a world increasingly likely to be subject to severe climate change, the gaps in our knowledge about the consequences of climate change for conflict are daunting. More importantly, the potential for “conventional wisdom” to be established based on spreading of hearsay and unfounded claims, is clearly evident and potentially detrimental to appropriate policy action. The formulation of appropriate policies by the international community aiming at preventing conflict requires knowledge of the relative contribution and interactions of the main channels of transmission (i.e., economic, political, relative power, etc) of climate change to conflict. We believe that our research findings entail important policy implications for policymakers interested in knowing how to peacefully cope with the effects of climate change on the likelihood of conflict. The results of this research project can contribute to generating the scientific information on which policymakers can base their decisions (see also below).

- Questions that merit further exploration (scientific, practical, methodological) or that have risen as a result of the research;

While our empirical results provide no support for the climate change–economic growth–conflict pathway and the effect of climate induced dissatisfaction on conflict, further research is required before we can move towards closure of the debate. In particular, it would be very useful to improve on existing indicators of climatic variability, adaptation to climate variability, and relevant (from the viewpoint of violent conflict) economic performance. For instance, in the absence of appropriate indicators for adaptation it remains difficult to estimate the effect of climatic variability on economic performance and hence on the probability of violent conflict.

In addition, our results offer only very weak support for a mediating effect of political system characteristics. Whereas some of our empirical models suggest that deteriorating economic growth can increase the likelihood of violent conflict in autocratic countries, this finding is fragile with regard to model specification. More research is needed to disentangle the mediating effects of political system and in particular of democratic institutions especially since research has shown that institutions in conjunction with ethnic diversity affect the risk of civil war (Schneider and Wiesehomeier 2008).

- Practical and policy recommendations that follow from the results obtained;

In view of our results for the climate change–conflict relationship and its contingency on democracy, one of the policy implications of our findings is that investing in measures that promote economic growth (preferably in a climate-friendly way), democracy, and non-violent conflict resolution can qualify as a no-regrets policy. Even if climatic changes ultimately turn out to have no conflict promoting effect, investing in such measures is likely to have a conflict reducing effect. And if climatic changes do turn out to have a conflict increasing effect, countries with greater economic capacity and democratic institutions are likely to have a superior capacity to avoid or escape the climate change–poverty–conflict trap.

Another policy-implication of our findings is that a more differentiated perspective on the issue of environmental migration is urgently needed. It remains possible that abrupt and extreme climatic changes could force people to migrate permanently from some areas of the world, particularly from low-lying coastal areas in some developing countries. However, if the past provides any insights into what may happen in the future, our results suggest that most people prefer adaptation over migration, except if social bonds to their current location are weak. This finding applies both to slow-onset, longer-term and to sudden-onset, shorter-term environmental problems. The main implication is, therefore, that spectacular “climate refugee” scenarios (Laczko and Aghazarm 2009) are probably exaggerated, and that financial and technical support for adaptation to environmental degradation resulting from climate change or other causes is the most productive policy-option.

Finally, the results of the analysis of the Syr Darya river basin indicate that the riparian countries do have some time to set up an effective international framework for water allocation in order to prevent climate-induced geohazards.

- Information regarding past and expected publications and other activities (articles, books, conferences, workshops, etc.).

Publications (peer review journals) (attached to this report)

1. Bernauer, Thomas, Tobias Böhmelt & Vally Koubi (2011) Environmental changes and violent conflict. *Environmental Research Letters* 6(00): 000–000.
2. Koubi, Vally, Thomas Bernauer, Anna Kalbhenn & Gabriele Spilker (2012) Climate variability, economic growth, and civil conflict. *Journal of Peace Research* 49(1): 000–000.
3. Bernauer, Thomas & Tobias Siegfried (2012) Climate change and international water conflict in Central Asia. *Journal of Peace Research* 49(1): 000–000.

Working papers (attached to this report):

1. Koubi, Vally, Lena Schaffer, Gabriele Spilker & Thomas Bernauer "On the environment-migration nexus," 2011.
2. Siegfried, Tobias, Lucas Beck, Vally Koubi & Thomas Bernauer "Climate change, conflict and peace in international river basins - A theoretical perspective," 2011.
3. Koubi, Vally, Jacek Kugler, Tobias Böhmelt & Ted Kugler "Climate change, Power Transition, and civil conflict," 2011.

Conference presentations:

1. "Climate change, economic growth, and conflict," (V. Koubi, T. Bernauer, A. Kalbhenn and G. Spilker)
 - Annual Meeting of the International Political Economy Society, Boston, MA, November 12-13, 2010
 - Princeton Conference on Climate Change, February 17-19, 2011
2. "Climate change, conflict and peace in international river basins - A theoretical perspective," (T. Siegfried, L. Beck, V. Koubi, T. Bernauer)
 - Annual Meeting of the International Studies Association, Montreal, Canada, March 2011
 - Annual Meeting of the European Political Science Association, Dublin, Ireland, June 2011
3. "Climate change, migration, and civil conflict," (V. Koubi, L. Schaffer and G. Spilker)
 - Annual Meeting of the European Political Science Association (EPSA), Dublin, Ireland, June 2011
 - Annual Meeting of the American Political Science Association (APSA), Seattle, Washington, USA, September 2011
 - Annual Meeting of the International Political Economy Society (IPES), Maddison, WI., November 2011
 - Princeton Conference on Environmental Politics, December 2011
4. "Power transition, environmental degradation, and civil conflict," (V. Koubi, J. Kugler, T. Böhmelt and T. Kugler)
 - Annual Meeting of the European Political Science Association (EPSA), Dublin, Ireland, June 2011

Workshop

We organized a workshop on "Climate Change and Security" with the financial support of the Swiss Network of International Studies (SNIS). The workshop was held on Friday, December 3rd, 2010, at Villa Hatt in Zurich. The purpose of this workshop was to investigate whether climate change presents a threat to global security and to discuss policy measures that might help countries that are vulnerable to climate change to cope with the problem in ways and by means that prevent conflicts in the future. 10 invited speakers from research and academic institutions (Nils Petter Gleditsch, Peace Research Institute Oslo (PRIO); Halvard Buhaug, Peace Research Institute Oslo (PRIO); Cullen Hendrix, University of North Texas, USA; Clionadh Raleigh, Trinity College Dublin; Sarah Glaser, University of Kansas, USA; Tobias Siegfried, Columbia Water Center, Columbia University), Intergovernmental Organizations (IGOs) (Karoline Popp, International Organization for Migration (IOM); Ioana Creitaru, United Nations Development Programme (UNDP)), and Nongovernmental Organizations (NGOs) (*Laurent Goetschel*, Swisspeace; Katie Harris, Institute of Development Studies, UK) as well as approximately 20 guests attended the workshop.

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