

Analysis of Chinese Communist Party Resiliency and Past Stability in Light of Agriculture
Productivity and Social Landscapes

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Authoritarian political systems are unique infrastructures because they are self organized and evolve depending on the behaviors of the variables and subsystems which they encapsulate. However, they still have a strong character of control and are often not flexible once formed. In general, governments act as centralizing forces that feed back into the many various subsystems and are a complex architecture because of their wide range information inputs and outputs. Citizen well being, social structures, resource management, economics, and international and domestic relations are all examples of specific subsystems which feed and shape information passing through a political system, informing their policy and decision making (Figure 1). Much like an ecosystem, these subsystems act as independent agents and their emergent behaviors rely on one another to maintain their survival. The behaviors of these subsystems and their connections directly inform political actions, behavior, and stability. First let us clearly define our system, the boundaries, and the key variables at play in the resiliency of an authoritarian political structure. In this paper, the system we are going to explore and analyze is China's authoritarian political regime, the Chinese Communist Party (CCP) and its resiliency. We will explicitly draw the boundaries to contain the most prominent variables which affects political decisions for urban and rural areas. We will mainly focus on agriculture productivity, urban bias, urban and rural income, and rural migration to analyze China's political stability and resilience in the face of climate and social landscape changes (Figure 1).

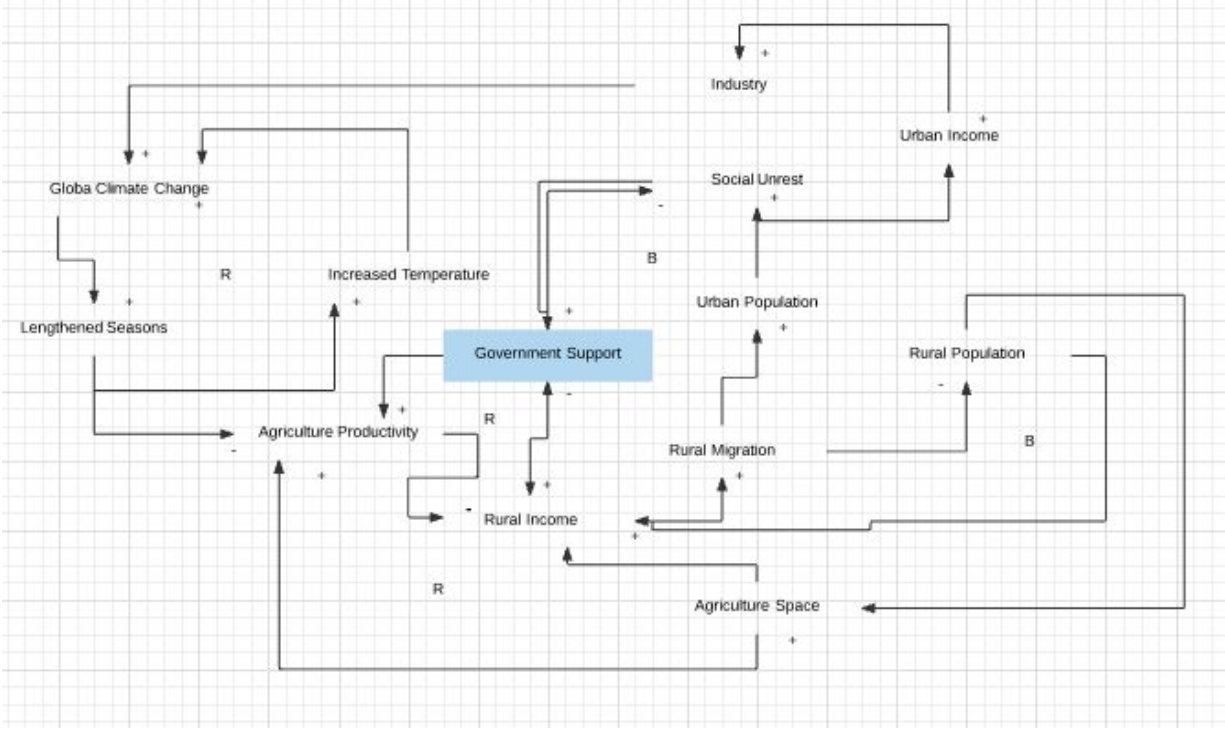


Figure 1. Causal Loop Diagram Of Variables and Behaviors Affecting Urban Bias in China’s political system

In Donella H. Meadows’ primer, “thinking in Systems, she explains that one of the key factors to maintain regime stability is its resilience and diversity” (Meadows, 2008). The Chinese Communist Party, as an authoritarian political system, has resisted many disturbances which were the downfall of similar political parties in the past (Wallace, 2014). Although information and access to current situations within China are limited due to national sensitivity and small data pools, as suggested by Wallace, China’s political system appears to show signs of structure resiliency because of its success of maintaining its very survival. This is largely due to its diverse geography, large agriculture capabilities, and political efficiency (Wallace,

2014). However, because it relies heavily on geography and the unification between social landscapes, urban and rural communities, it's resilience can be equally compromised due to changes or fluctuations between these two subsystems (Figure 1). If agriculture productivity changes, the Chinese Communist Party can possibly shift into a new unknown regime because of how the changes stress government support, resources, and social structures which were historically the variables which strengthened the CCP (Fang et al, 2015; Yun et al, 2014; Yuheng, 2011). This can be debated to be good or bad, but the focus of this paper will be to strictly analyze how the variables within China's political system interact and reinforce or shift its stability. Although access to surveys and data pools are limited, we do have trends that show changing geography, social landscapes, and increases in urban bias are key variables which have the most impact on China's political resilience both currently and historically. This paper seeks to analyze what has maintained the CCP resiliency and to further explore its potential hazards or weak points, exacerbated by climate change, which are compromising to its stability.

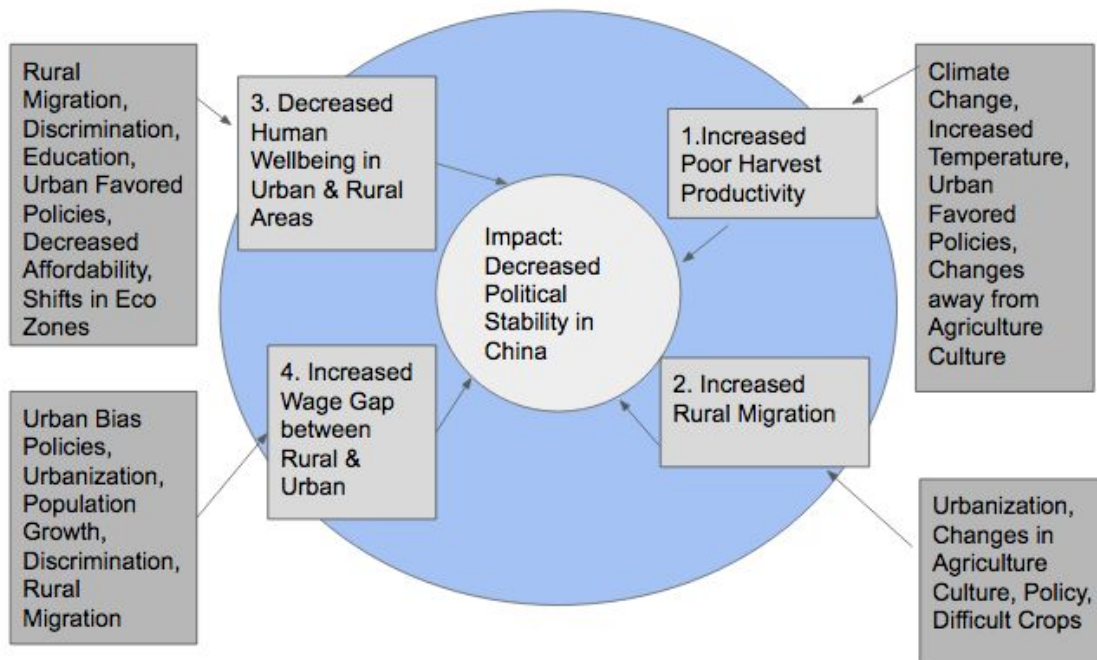


Figure 2: Impact Diagram on CCP stability

We must first explore what factors comprise the resiliency of the CCP political system. Wallace argues that geography plays a large role in the resiliency of the Chinese political system as it informs urban biased support, population density in cities, and community unification. Exploring this claim, data trends suggest that the relationship between agriculture and rural income might influence the amount of governmental support and speed of rural migration (Wallace, 2014; Pierskalla, 2015). The size and concentration of agricultural areas directly shape or influence the strength of that support. In larger and more dense agriculture focused regions, rural GDP per capita are greater and as a result, trends show that those rural communities feel less pressure to migrate and show less signs of unrest. As a result, the government feels less stress to give increased support. However, In smaller agricultural regions, much more government support, or rural favorable policies, are needed to support

their weak economy (Pierskalla, 2015; Yusef et al, 2008). While exploring the elements that has maintained China's political resiliency, it is noticeable that geography, agriculture productivity specifically, appears to be one of the fundamental variables for its survival. Historically, China's political stability has relied on resilient crops and seasonal cycles. Scholars observe that in ancient China, the quality and occurrence of poor harvests had a heavy impact on that specific dynasties durability and social structures. During unseasonably cold or warm periods, when poor grain harvests were produced, China would see a shift of power, economic depression, and mass revolution. However, during warm seasons and predictable diurnal cycles, China witnessed times of political and social peace along with flourishing economies. These historical patterns say a lot about how climate change heavily impacts China's economy, social structure, and political stability (Fang et al, 2015). However, as climate change impacts harvest quality, the resulting behavior of the communities directly impact political stability. Changes to China's phenology, which are seen through delayed and lengthened seasons and temperatures (Lin, 2013; Fengyi et al, 2015), inevitably directly disrupts harvest productivity (Liangzhi et al, 2009). Currently, phenophase data for China shows advancing trends of seasons lengthened by 21, 3, and 9 days, and winter shortened by 17, 4, 18, days between the years 2003-2013. Parallel to the delayed start of spring and summer, temperatures show a decrease by -6.49 to -6.55 days/celcius in spring and -3.65 to -5.02 days/celsius in summer. Data also showed temperature increases by 8.13 to 10.27 days/°C in autumn, and 4.76 to 10.00 days/°C in winter. The temperature shifts act as a feedback loop, aiding to further alterations in China's overall phenophases (Fengyi et al, 2016). The impacts of changes in China's regional phenophases reflect themselves in the decreased

productivity of China's harvests, wide rural migration, and nation wide shifts in eco-zones across the country (Yin et al, 2016; Lin, 2016; Woo, 2009; Liangzhi, 2009). For example, for China's wheat productivity, data outputs show that more than a 1°C increase in growing season temperature reduces wheat yields by about 3–10%. Research concludes that increasing temperature over the past two decades accounts for a 4.5% decline in wheat yields in China. The majority of the wheat yield growth, 64%, comes from an increased amount of resources which are needed to support regular productivity in lengthened seasons and rising temperatures (Liangzhi, et al 2009). As a combative measure, China has implemented new crop varieties to withstand the current increases to climate. However, questions still remain as to how long these crop varieties will withstand further temperature increases and how they will impact China's greater environment (Leilei et al, 2012). Ultimately, climate change decreases harvest quality and output in China. As a result, rural income and economy are negatively affected (Figure 3), driving communities to migrate into dense urban areas where economic growth is centralized. However, this reinforces urban bias, as it further centralizes economy and industry, and widens economic inequality gaps between rural and urban areas (Fulu et al, 2008; Woo, 2009; Yusef et al, 2008). Climate change's negative impact on harvest productivity increases urban densities, putting pressure on social structures and government.

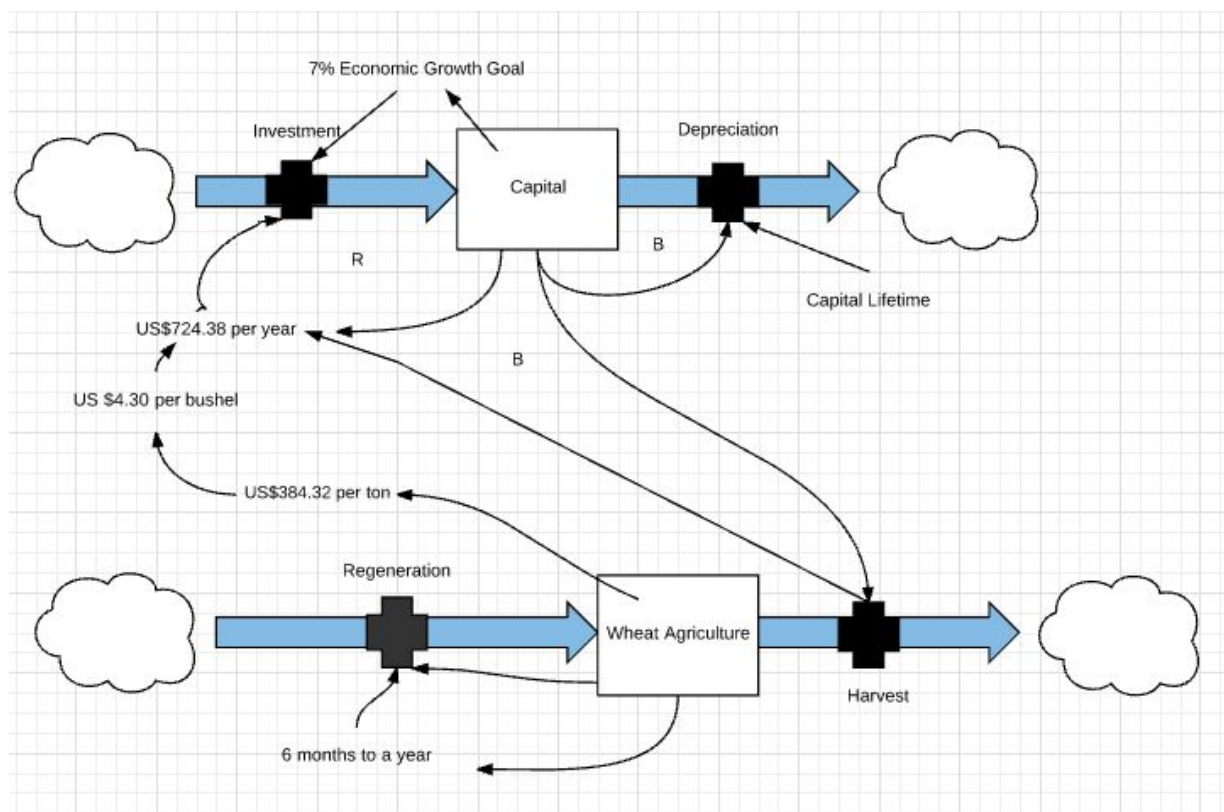


Figure 3: Two Stock & Flow of Wheat Agriculture and Capital in China.

Agriculture productivity has multiple effects on the gap between rural and urban China. Trends show that rural areas are beginning to industrialize to strengthen their economic resiliency against failing crops, changes in land use, and poor government support (Yusef et al, 2008; Fulu et al, 2008; Woo, 2009). However, most rural individuals choose to migrate into cities where economic opportunities, healthcare, education, and other support are greatest yet also show the most discrimination (World Bank, 2010; Jixiang, 2015; Pengyu, 2015). Although rural migration is shown to increase rural individuals incomes, it increases centralization of government support into urban dense areas (Yusef et al, 2008). Climate change's impact on agricultural productivity increases trends towards urban bias. Surveys from

the NBS show that in 2004 95.3 million, more than 17.2 percent, of urban populations came from rural families migrating into urban cities. In 2002, only 12 percent of urban populations were made up of rural migrant families (Yusef et al, 2008). A 2002 census suggests that economic factors and family placement play important roles in increasing rural migration numbers in urban communities. 46.6% of total migrants said that their motivations for migrating into cities were for economic opportunities. This is a significant change from the 1990 census which showed that only 23.6% were motivated by economic reasons (Yusef et al, 2008). Although migration into urban areas is likely to increase capital and income in urban areas, it centralizes government support in those growing areas because of the greater populace stress. As a result, increases in rural migration ultimately reinforce governmental urban bias tendencies. Furthermore, increased rural migration can lend a hand in adding to discontent and social unrest in large cities.

More densely populated urban areas can increase the risk of social unrest and citizen well being which can potentially compromise political stability. Wallace argues that a key to China's past political stability, revolved around the fact that they had less urban slums because they discourage rural migration by supporting agriculture rather than centralized growth in urban areas (Wallace, 2014). Increases in urban slums has been the pattern following development and rapid growth for many developing cities as they reflect how people are driven towards where opportunity and economic productivity are at their best, yet can hinder social stability due to unrest, discrimination, and state of their environments (Woo, 2008). China has avoided slums altogether, reflecting that in the beginning, the CCP avoided urban biased policies in the Mao and Post Mao period as policies were set in place that provided economic

support to rural areas rather than focus on urban financially supporting urban centers (Wallace, 2014; Oi, 2017; Jixiang, 2015). It is suggested that it was China's policies which favored rural communities, which encouraged more residents to remain in the rural areas rather than migrate (Wallace, 2014; Bian, 2017). However, China's current policies favor urban development and growth rather than rural communities (Jixiang et al, 2015). Large urban areas increase the risk of organized riots and strikes which have been the turning point for other authoritarian regimes (Pierskalla, 2015; Wallace, 2014). As a move to distribute wealth, unify the relationships between urban and rural, and lessen revolts, the CCP avoided policies which favored and centralized wealth in urban areas (Bian, 2017; Oi, 2017). However, currently we see growing urban populations, large income gaps between urban and rural communities, and less focus on agriculture productivity which are key signs that government support and growth are mainly being centralized in urban areas (Wallace, 2014, Pierskalla, 2015; Yusef et al, 2008). Current trends in these areas demonstrate that China might be subject to previously avoided urban bias, which had historically helped it maintain its political stability.

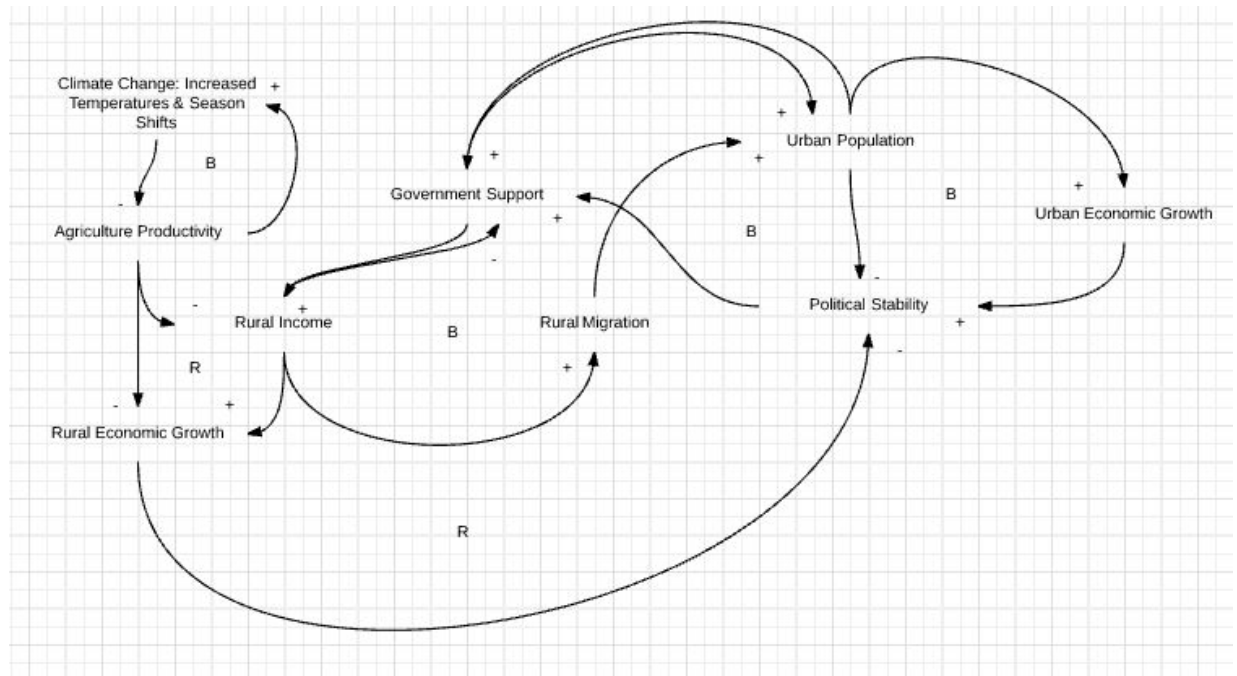


Figure 4: Closer look at CCP feedback loops with disturbances from climate change

In conclusion, China's Communist Party's resiliency is largely dependent on its ability to sustain and bridge the gap between urban and rural areas. As described by Wallace and others, this relationship can be extremely complicated because of growing income gaps due to changes and evolutions in geography and social landscapes along with new industries and information. Historically, during the Mao period of the Communist Party, development and economic policies in China focused on the growth and health of rural communities. In order to maintain stability, the CCP sought to distribute wealth, unify the relationships between urban and rural, and lessen population densities. Historically, they avoided policies which favored and centralized wealth in urban areas (Bain, 2017; Wallace, 2014). However, today, we see growing urban populations, large income gaps between urban and rural communities, and less

focus on agriculture productivity which are key signs that government support and growth are mainly being centralized in urban areas. The move away from supporting agricultural productivity is specifically dangerous because as climate change increases temperature and lengthens season periods, harvest productivity oscillates and becomes unstable. There are no clear answers as to how China's political stability will be affected directly from these changes. However it is clear from historical and current trends that movements away from agriculture, increased centralization in urban areas, and more dense cities will negatively shape the political party's actions in the future. Despite further trends that suggest China moving towards urban bias, small numbers of industry and large start up enterprises in rural communities suggest China is determination to bridge the income inequality gap between its rural and urban areas and avoid centralized urban bias to enforce their stability (Oi, 2017; Wallace, 2016).

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