

**Of watermelons and men:
Vulnerability, Double Exposures and Biopolitics
in Seyhan River Basin**

Ethemcan Turhan

Ph.D. Candidate

Institut de Ciència i Tecnologia Ambientals

Universitat Autònoma de Barcelona

E-mail: [ethemcan.turhan\[at\]uab.cat](mailto:ethemcan.turhan@uab.cat)



John Rawls, in his seminal book “A Theory of Justice” (1999) argues that “*A society is just only if it is arranged in such a way that the position of the least advantaged is optimized*”. This argument holds in a strong manner in today’s constantly interconnecting world under different drivers. Globalization, as we know it, is making distances shorter between markets, commodities and vendors as well as social movements, exploited groups and those who fight for social justice in their own domains. Global environmental changes on the other hand are changing the face of the world and all dependent systems at a previously unseen rate, magnitude and scale (Leichenko and O’Brien, 2008). However, as a Swahili proverb puts it clearly, when elephants fight, it is the grass that gets hurt (“*Wapiganapo tembo nyasi huumia*”). In this regard, to ensure equity and justice, it is inevitable to put the least advantaged into the spotlight and address their vulnerabilities. Growing connectivity of global changes underline combined impacts of globalization and global environmental change on these least advantaged communities (ibid). Following this assertion, this study will focus on vulnerabilities of migrant seasonal agricultural workers in eastern Mediterranean coast of Turkey as the unit of analysis under the impacts of these two big on-going changes mentioned above. The study aims at making a case for analysis of seasonal workers from a vulnerability perspective and proposing a capabilities approach to carry out this analysis.

The last decade has seen an ever-increasing amount of academic research, international development and civil society work to address different facets of climate change. IPCC’s 4th Assessment Report (2007) defined the key vulnerabilities in the face of climate change as food supply, infrastructure, health, water resources, coastal systems, ecosystems, global biogeochemical cycles, ice sheets and modes of oceanic and atmospheric circulation. It is striking that these key vulnerabilities often form the basis or essential components of human well-being. Put simply, given the rate and scale of change mentioned, the focus of concern cannot only be on reducing the greenhouse gas emissions but also urgent action on adaptation is required. On this point, even though human history shows countless examples of autonomous adaptation to change, future climate changes are said to push beyond the limits of such adaptation (Adger and Vincent, 2005). That is because uncertainties and stakes are high from the perspective

of adaptation. So the question at stake is not whether we can adapt to climate change or not but whether we can adapt in due time with prioritizing the least advantaged through efficient use of resources. Dalby (2009) refers to this as the trick that needs to be tackled by doing mitigation and adaptation simultaneously making sure that our adaptations mitigate disruptive tendencies. Such an effort cannot be undertaken without taking into consideration the social justice aspects of climate change. However as Paavola and Adger (2006) rightfully point out until recently most discussions on climate justice often ignored the vulnerable, the incidence of impacts, and how to adapt to them. They were often stuck between discussions of (what Lewis Mumford called back in 1934) “carboniferous capitalism” vs. “ecological modernization” (Dalby and Paterson, 2008).

On the other hand, despite its inevitable complexities, globalization - as an undeniable fact - can be defined as shrinking of the world and untaming of the borders of goods, people and ideas (Harvey, 1990; Beck, 2000). Stanford Encyclopedia of Philosophy, building on the contemporary social theory, states that “globalization refers to fundamental changes in the spatial and temporal contours of social existence, according to which the significance of space or territory undergoes shifts in the face of a no less dramatic acceleration in the temporal structure of crucial forms of human activity” (Schuerman, 2010). Leichenko and O’Brien (2008) observe that despite the general agreement on the major facets of globalization, its character, scope or significance are under scrutiny. Today when we think about globalization, we tend to think about interconnectedness of communication systems, capital flows, and easier travel of people, goods and services, as well as the very global alter-globalization movements and supranational bodies and transnational corporations dominating world economy. These in themselves carry the contradictions and complications of globalization. Yet when it comes to converge globalization with global environmental change, both academic and policy realms have treated these two drivers as independent of each other or very slightly dependent on each other. However, global shocks and stresses, from financial crisis to failure of climate change regime remind us that more often than not these drivers are linked. I will try to elaborate this through a focus on climate change, vulnerabilities and local capabilities.

As stated, two main paths that discussion on climate change takes place in global climate governance regime are mitigation and adaptation. These approaches reveal two sides of the same coin in the face of a global risk. In a colloquial manner, mitigation is being referred to as “avoiding what is manageable” while adaptation is the action on “managing what is unavoidable”. It is no prophecy that adaptation will be on the global agenda increasingly as the cumulative nature of greenhouse gas emissions will prolong the impacts even if all the emissions were to be mitigated sharply today. Thus there are justifiable concerns for robust research, sound implementation and advance planning. Adger and Barnett (2009) draw attention to four main reasons for concern for adaptation as “*contractions and uncertainties in the window of opportunity for adaptation; the difference between adaptive capacity and adaptive action; risk of maladaptation and misguided measures of loss*”. It can be argued that even the most considerate adaptation initiatives might recoil if they fail to take these concerns in their planning. In the light of these, there is an increasing attention on vulnerability assessments that attempt to facilitate adaptation initiatives or develop adaptive capacity. However, it should be considered that different understandings of vulnerabilities and adaptation measures draw the borders of action.

O’Brien and Wolf (2010) state that adaptation research frequently focus on infrastructure and technological changes to reduce vulnerability to foreseen impacts. Nonetheless they also claim that, there are limitations to this approach as all adaptation decisions have socially differentiated impacts and equity implications (Adger and Vincent, 2005). From an assessment of current policies and practices on adaptation, new ideas and proposals are likely to emerge. Thus, in many instances, adaptation (or vulnerability reduction at its best) will provide net benefits to the economy or agricultural system even in the absence of climate change or other global environmental challenges (Burton et al., 2002). This comes from an anticipatory understanding of adaptation towards perceived risks. Even though the particular impact doesn’t take place, the system will be improved in such a way that it will be more stable against other internal and external threats to its stability and well-being.

So far climate change adaptation literature mostly focused on the type of approaches what Burton et al. (2002) calls as the “first-generation adaptation research”. Such

research aims inherently at reducing exposure to anticipated negative impacts in a hypothetical future. So far, assessments carried out by this means of adaptation research provided us with future scenarios that facilitate preparation of climate-sensitive development plans and investment schemes for medium to long-term disaster management. Often this kind of research employs aggregate indices to assess the status of socio-ecological systems. However developments in the field and the scale of change and impacts on the most disadvantaged groups called for more research on structural causes of vulnerability and a more comprehensive understanding of adaptation that will incorporate human dimensions. Use of aggregated indices in first-generation adaptation research to aid policy making faced criticism as it hindered the distributional vulnerabilities and power relations (thus leading to social justice claims) within smaller subsets of societies. Barnett et al. (2008) argue that these indices are shown to be much less useful than empirical studies of particular places. Thus there is a need for time and place specific, empirical adaptation research, which not only contributes to the academic literature and aids in policymaking but also empowers the vulnerable communities.

What is vulnerability? Who is vulnerable?

Vulnerability in a broad sense refers to the degree of defenselessness of a system to a damage or harm (Porter and Goulden, 2010). The different paths vulnerability research has taken across sectors and disciplines have caused variation in its conceptualization (Füssel, 2007). However in operationalizing, it is often referred to as a function of both a system's exposure and sensitivity to stress and its capacity to absorb or cope with the effects of these stressors (Eakin and Luers, 2006). Exposure in this definition refers to a threat external to the system while sensitivity refers to degree to which a system is affected before exposure to a stress (Clark et al., 2000). Exposure can also be defined as *"the condition of being subjected to some effect or influence resulting from a process of global change"* in a broader framework (Leichenko and O'Brien, 2008). On the other hand, the capacity to absorb or cope with the effects of stressors as well as being able to take advantage of opportunities in this definition is often termed as adaptive capacity (Eakin and Luers, 2006; Brooks et al., 2003; IPCC, 2001). However we should note that relations between these concepts as well as their meanings are contested (Eakin and

Luers, 2006).

Smit and Pilifosova (2003) argue that the main feature of a vulnerability assessment is its recognition of the system exposed to impacts (community, region or sector) as its starting point rather than focusing on the impacts per se. From a “starting-point” perspective, vulnerability of a socio-ecological system does not solely depend on the characteristics and responses of the natural system it inhabits but also pre-existing inequalities that result in unequal distribution of vulnerability (Adger, 2006). Pre-existing inequalities manifest themselves as social vulnerabilities, which limit access of the marginalized to resources to cope or to compensate at times of need.

Wisner et al.’s (2004) (previously published as Blaikie et al., 1994) vision of vulnerability is one of the first to define vulnerability inclusive of a human dimension. These authors define vulnerability as “*the characteristics of a person or group and their situation that influence their capacity to anticipate, to cope with, resist and recover from the impacts of a natural hazard.*” Furthermore, by listing the key variables in defining the extent of a certain impact as social class, occupation, ethnicity, gender, disability and health status, age, immigration status and the nature and extent of social networks, they have clearly placed the human dimension in the frontline of vulnerability.

The most vulnerable societies seem to be those who are also the weakest economically. Similarly the most vulnerable members of each society are those that are economically marginalized (UNDP, 1994). These key vulnerable groups are often excluded from decision making as regards the public management of climate related risks (Adger, 2003). Power relations and different entitlements within a given community often yield differentiated vulnerabilities. At this point Kelly and Adger’s (2000) discussion of social vulnerability builds upon the architecture of entitlements (defined briefly as “*The factors, which determine levels of social vulnerability, define how the pattern of access to resources is constructed*”), which indeed lays its foundations in the entitlements theory of Amartya Sen. This architecture speaks of social, economic and institutional factors influencing the levels of vulnerability within a community (Adger and Kelly, 1999; Kelly and Adger, 2000).

This backbone of social vulnerability is derived from Sen's work on capabilities approach. Sen (1999) defines capability as the alternative combinations of functionings that are feasible for one to achieve. Functioning in this definition refers to an achievement of a person: what he or she manages to do or to be (Sen, 1985). Achieving a functioning with a set of commodity bundles that one has command (entitlements) on depends on personal and social arrangements. These arrangements encompass key variables that are cited from Wisner et al. (2004) above. Thus one's capability to be free from extreme poverty in times of drought, one's capability to save and protect his/her family's entitlements during a flashflood are functions of a complex set of personal and social arrangements on top of physical conditions. This approach stems from the idea of human freedoms inherently being both the ends and the means of human development. According to definition of its pioneer, UNDP (1990), human development is a process of enlarging people's choices. In this regard, enhancement of human freedoms should be seen as the main goal of any vulnerability reduction attempt.

Seasonal agricultural work, watermelons and vulnerability in lower Seyhan

Turkey, ranked as 79th in 2009 Human Development Index of UNDP (2009), shows striking income inequalities. This gap can be explained with different aspects of its political economy, including the shift in agriculture's contribution to GDP towards services as well as the phenomena of decades long internal migration. One of the drivers of agricultural economy in Turkey is export-oriented production. More often than not, this type of production involves high demand for manual labor. Gülçubuk (2007) argues that agricultural policy being orchestrated by international policy formation agencies in Turkey has affected 90% of small agricultural businesses and 35% of landless rural population and this policy has furthermore caused unemployment, poverty and migration from the rural to urban areas working as unregistered workers in large landholdings. This reflects the reality of migrant seasonal agricultural workers in some of the most fertile regions of Turkey. Discussing on the role of immigrant workers in agriculture in California, Martin (2001) argues that a cyclical relation exists between immigration, agricultural employment and poverty. Furthermore Brand et al. (2009) discuss in this context that over-exploitation of labor follows the same logic of profit and accumulation that is at work in the destruction of nature.

This study focuses on seasonal agricultural work in downstream Seyhan river basin in eastern Mediterranean coast of Turkey. Adana, which is the biggest province in the region, clearly reflects these issues of double exposures and above-mentioned problems associated with agricultural production. Adana is the 5th biggest city of the country and the biggest urban center in the Çukurova Plain lying between Seyhan and Ceyhan rivers (DPT, 2003). It ranks 8th (out of 81 cities) using a composite function of 58 socio-economic indicators in Turkey (DPT, 2003). With a massive 75% urbanization rate (average of Turkey is 64%), almost half of Adana's urban population lives below national poverty level (3.6 USD/day at current prices). Moreover its population has increased by 905% between 1927 and 2009 (Provincial population according to 2009 census being 2.062.226) (TURKSTAT, 2010).

Ünsal (2004) observes that this transformation of Adana is due to “*massive movement of millions of people...initiated by low agricultural earnings, a rugged landscape and long fights between the separatist groups and the state forces*”. She elaborates that Adana's agriculture attracted the first wave of migration in 1950s when labor-intensive cotton plantations and agricultural industries required inexpensive labor. Latter waves of migrations were shaped by the need for cheap labor as well as political realities of Turkey such as internally displaced population. Designated with an agriculture based development pattern, Adana undoubtedly reflects the role given to Turkey in the global economy of post-World War II (Ünsal, 2004).

Barnett (2001) argues that lack of vulnerability data is more problematic than having various assessments and reports of existing situation as it reflects ignorance and neglect. Even though often named as the “poorest of the poor”, seasonal migrant agricultural workers in Çukurova plain in the downstream of Seyhan river basin and their livelihoods has been exposed to indifference. They are not considered as residents in the districts to which they migrate for around 6-9 months a year; in most occasions this prevents them to have access to even the most basic health services. On top of this, children migrating with their families are often taken away from education and exposed to harsh conditions of agricultural work. As their days of reported work are limited and sporadic, they are not registered under any social security system.

Telling the story of California landscape making in early 20th century, Don Mitchell (1996) talks about the strategies of migrant workers as being “*forced to look after themselves, rather than to the state or private philanthropy, to develop effective means for coping with (and perhaps transforming) the structures of their oppression.*” Coping strategies of the weak for power, landscape and circumstances into which it arrives find its manifestations in many ways. He also concludes that without migrant labor, agricultural economy of California wouldn’t have been the same by any means (1996). The same very much holds for Çukurova, wide plain lying between downstreams of Seyhan and Ceyhan rivers in southern coast of Turkey. Thus, to see how seasonal workers cope with the double exposures is an interesting research topic not only because of precariousness of the issue but also due to policy significance it entails. Tucker et al. (2010)’s comparative work on the impact of climate change and market shocks on coffee producers in Mexico, Guatemala and Honduras in this regard confirm that policies need to fit diverse local contexts and perceptions. They argue that no single policy can grasp the range of experiences and conditions on the ground.

Labor-intensive agriculture and seasonal migration has a long woven relation in the lower Seyhan basin. This has increasingly been the case for the last 25 years, with the rise of the violent conflict between separatist PKK (Kurdistan Workers’ Party) and Turkish army in the Eastern and Southeastern Turkey, which yielded an estimated amount of IDP’s (internally displaced population) between 953.680-1.201.200 with more than 75% being from rural regions (Hacettepe University, 2006). Poor populations from these regions have migrated permanently and seasonally in search of better economic opportunities. 30.2% of rural families in Turkey are known to be landless whereas 69.4% of seasonal migrant workers defined themselves as landless in Karataş province of Adana (Gülçubuk et al., 2003). A great majority of the seasonal workers are from Turkey’s ethnic minority, of Kurdish origin, which on top of other issues contributes to social exclusion of the communities.

Seasonal agricultural workers migrate to the region for sowing, setting up greenhouses, hoeing and harvest of products, mainly cotton, fruits and vegetables, as negotiated between agricultural intermediaries and landowners. Despite local authorities report the number of seasonal workers as 20.000 in all of Adana, it is estimated that around

100.000 workers arrive in different time intervals in the region. Both high environmental risk and socio-economic marginalization seem to be extremely relevant for farmers and, in particular, seasonal workers in the lower Seyhan River Basin. Among particularly relevant risks for the small-scale farmers and the seasonal workers are limited access to clean water, decrease in income, loss of trade/exchange entitlements and increase in climate related health problems and contagious diseases. Clear manifestations of these vulnerabilities exist in production of watermelons for national and international markets.

Turkey's production of watermelon corresponds to 4% of the world production, placing it as the 2nd biggest producer (3,445,441 tons in 2007) behind China (63,238,000 tons in 2007) (FAO, 2009). Watermelon covers 20% of the agricultural land spared for fruits and vegetables in Adana (Provincial Directorate of Agriculture of Adana, 2008). Tsujii and Erkan (2007) state that a shift to watermelon production is widely seen in the Lower Seyhan region mainly by small farmers since watermelons have high land productivity in the face of failing crops (maize and barley) with rising mean temperatures. However, watermelon production is a labor and resource-intensive effort that requires as much as 8-9 people/decare of land, which is expected to further draw more seasonal migration to the region (Gümüş, 2005). Currently, the total amount of land allocated to watermelon production in Adana is 151.511 decares (Provincial Directorate of Agriculture of Adana, 2008). However this land coverage is subject to serious fluctuations in accordance with market and climatic conditions as in last two years, there has been a retreat of this coverage to 90.000s in 2009 and expansion to 120.000s in 2010 (Cumhuriyet, 2010).

During a focus group in Adana respondents who were landowners reported financial losses in the last 3 years due to low prices in the domestic market, competition with import from Iran and lack of export possibilities. O'Brien and Leichenko (2000) argue that "double exposure" to vulnerability occurs for the communities at the convergence point of high environmental risks and socio-economic marginalization. This could be linked to the abovementioned case where those who live off agriculture are not only suffering from the unreliable climatic conditions which might lead to destruction of their harvest but also from the increasing competition due to border trade with Iran that

provides the market with watermelons earlier thus dominating and decreasing the prices for Seyhan producers as a consequence of global market integration. This further prevents Seyhan producers to export their product to foreign markets, which are already served by countries like Iran and Egypt. The situation is further exacerbated by a cross-border trade agreement between Turkey and Iran, which initially removed tariffs for the economic development of cities on the Eastern and Southeastern borders of Turkey with Georgia, Iran, Iraq and Syria, but has also made Iran the only country that exports watermelons to Turkey (Hurriyet, 2009).

Market conditions and border trade is not the only stressor on labor-intensive practice of watermelon farming in lower Seyhan river basin. An effort to assess the impact of climate change on agricultural production on arid areas was carried out jointly with the participation of Turkish, Japanese and Israeli academic groups between 2002-2007 in the Seyhan river basin under ICCAP (Impacts of Climate Change on Agricultural Production Systems in Arid Areas Project) (Watanabe, 2007). The biophysical studies that were carried out showed that risks include an increase in groundwater salinity as much as 25%, a decrease in groundwater recharge in the whole of the basin by 24.7 % to 27.4 %, mean annual temperature increases between 2-3,5°C and possible decreases in precipitation as much as 25% between 2070-2080 (Tezcan *et al.*, 2007; Watanabe, 2007). Stresses from market conditions and climate related shocks have impacts for all parties engaged in watermelon farming. However seasonal migrant agricultural workers, whose sole entitlement is their labor, are stripped out of their capabilities more than any other party.

Precariousness of the seasonal workers is not only about their labor and income but also about their livelihoods. Seasonal workers travel with all their family to sites of agricultural production every year. For most of the year, these groups reside in tents next to the fields, which they work in. This journey aiming at gaining the adequate income to feed the family for the rest of the year often ends up being a big burden on women and children. Children of the seasonal workers are often taken away from school during their compulsory primary school education to travel with their family at the beginning of the agricultural season. Despite significant decrease in child labor, still it is not rare to see children joining their parents in the agricultural work during their

time. Women on the other hand are responsible for daily maintenance of the tents and care for children. Lack of Turkish language skills causes a significant disadvantage for the women especially in times of emergency or in communicating their health problems.

According to a epidemiology study carried out by Department of Public Health of the Çukurova University in 2001, out of 77 malaria cases seen in Karataş District 57 were suffered by agricultural workers and their children (Sütölk et al., 2004). Also, out of 1,399 cases of seasonal workers registered at the clinic, 342 (24,4%) of the seasonal workers suffered from respiratory diseases during March-October 2002. A striking fact is the peak of medical cases being in the hottest month of the season, August with 34.7%. The same study estimates that daily water consumption is around 20L/capita among seasonal workers living in tents whereas the national average is 111L/capita daily.

As the tents of seasonal workers are often settled close to irrigation channels or creeks, rapid fluctuations in weather patterns cause a great deal of damage to their livelihoods. Increases in flashfloods in the region are causing great damage to tents and settlement sites of seasonal workers on top of causing serious health risks. Yet these flashfloods do not only impact their tents but also the fields from which the seasonal workers gain their year-round income. Negotiated between informal agricultural intermediaries and the landowners, seasonal workers receive a daily wage from the landowners 10% of which directly goes to the intermediary himself. In case of a frost or flashflood, which leaves the fields underwater, these payments (no matter at what point of the agricultural calendar) are suspended or postponed. Seasonal workers are the first ones to be disposed be it related to a climatic extreme or a market shock.

This brings up the issue of “biopolitics of disposability” (Giroux, 2007) for the agricultural production and its wageworkers in lower Seyhan basin. Grove (2010: 546) identifies this Foucauldian notion of biopolitics as being:

“[...] a complex signifier imbued with multiple and potentially conflicting meanings but [...] here I follow [...] the concept as rationalities and mechanisms of government that take “species life”, or the life of populations, as its object.”

Giroux (2007) stresses the importance of biopolitics as an attempt to think the impacts

of environmental/natural disaster shocks through not only how politics uses power to mediate the convergence of life and death but also how sovereign power proliferates those conditions in which individuals marginalized by race, class and gender are stripped of political significance. Through this, subjects of biopolitics are made speechless objects without agency and initiative shaped by rationalities and mechanisms of government. In case of agricultural workers, they turn into inputs to production that can easily be changed or replaced.

In line with this understanding, clarification of this “make live or let die” (Murray Li, 2009) vision of biopolitics is evident in governmental intervention as regards future climate risks, global market shocks and changes in the character of agriculture in lower Seyhan region. All decisions preferring a particular type of adaptation, by being only informed through biophysical studies, will eventually lead to being the biopolitics on the living and working conditions of thousands of agricultural workers arriving in the region each year. This encompasses both a transition towards capital-intensive agriculture instead of labor-intensive agriculture and an adaptation planning that only takes into account the vulnerabilities of residents in the region.

Following this vision, it can be said that seasonal workers’ vulnerability is somehow negotiated between parties excluding themselves and accepted as the disposable part of the society while they themselves are stripped of political significance in decisions regarding their livelihoods. Until very recently, there existed little work than post-disaster recovery aid (ie. Providing them with temporary shelter until flood retreats instead of revising and improving their settlements) by local authorities instead of improving the working and living conditions of seasonal workers structurally who are most vulnerable to shocks and stresses from two big global change drivers. They stand to be the most vulnerable, the most excluded and the most disposable in the Foucauldian governmentality of extensive agricultural production role given to Adana (Ünsal, 2004). Even the worst case scenarios of climate change might be adapted through sound planning of water resources and shift in crop patterns for the residents however the future of disposable masses of migrant workers remain in limbo in such a future.

Conclusion

Hobsbawn (1996) argues that Turkey remains “the only peasant stronghold...in or around the neighbourhood of Europe and the Middle East”. Considering increasing mechanization in agriculture, agricultural reforms imposed through global trade agreements and financial institutions, increasing climatic risks and high rates of urbanization is threatening this Turkish peasantry with seasonal workers being the most vulnerable of all. Recently, Turkish government has initiated a project (METIP) with a budget of 22.5 million euro on improving the living and working conditions of seasonal workers. This project is an attempt at providing the relevant infrastructure (ie. access to potable water, toilet, shower, kitchen and communal space facilities as well as prefabricated schools for the children) in order to improve the conditions that strip the seasonal workers’ from their entitlements.

Sen (1999) argue that 5 instrumental freedoms should be secured in order to provide the people with freedom to live the way they would like to live. These are (a) political freedoms, (b) economic facilities, (c) social opportunities, (d) transparency guarantees and (e) protective securities. Thus enhancement of physical infrastructure in overcoming the vulnerability of seasonal workers should be given priority however the systemic conditions that drive this type of agricultural work should also be challenged in order to secure these 5 instrumental freedoms to seasonal workers. Thus political participation as well as access to social opportunities should be provided on top of provision of indispensable social security arrangements. Decisions taken on the livelihoods of seasonal workers should be made transparently and be participatory not only of the intermediaries and landowners but the seasonal workers themselves. In this regard, power relations and perceived vulnerabilities in the field should be explored in depth while empowering seasonal workers to contribute in decisions regarding their mode of production and livelihoods.

Jacoby (2008) notes that Turkey is undergoing a “depeasantisation” linked in turn to the growth of landless workers which in turn start seeking for their year-round income as seasonal workers in regions other than their origin or end up in slums. Turkey, which has published its National Rural Development Strategy and is in process of preparing its

National Adaptation Plan of Action on Climate Change, should consider the migrant seasonal agricultural workers as one of the key vulnerable communities under the threat of double exposures and reconfigure its policies in a coherent manner. Moreover such plans should ensure improving the capabilities of these communities by securing the instrumental freedoms in order for them to gain agency in biopolitics of their lives as mentioned above. Only such an approach can reduce the vulnerability of the most vulnerable, slow down the rapid process of urbanization in the city center's peripheries, decrease social tension and provide multiple benefits for all parties engaged in agricultural activities.

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