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Expulsion by Pollution: the political economy of industrial parks in rural China

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Expulsion by Pollution: the political economy of industrial parks in rural China

Li Hua

Abstract

Inter-regional industrial transfer in China from East to Middle and West is actually pollution transfer. The rise of industrial parks with strong support from local developmentalist government has triggered industrial pollution in rural China. What the pollution has further caused is expelling people from their land, water and living environment because their use value has been largely reduced by pollution. Expulsion by pollution as a hidden form of expulsion has not been received deserved academic attentions. Based on the fieldwork in Gao Village in Jiangxi Province of China, this paper illuminates the dynamic and mechanism of expulsion by pollution and its implication for agrarian change. It argues the regime of developmentalist government and its alliance with private investors in the industrial park not only provides political space for pollution reproduction but also delimit the space for local villagers' environmental resistance. The capital accumulations of those private investors are at the expense of the local social and ecological costs. The destruction of local agroecology by pollution also accelerates proletarianization of rural labor since the productivity of their land and water has been destroyed. Without restructuring the underlying regime of developmentalist government and its alliance with capital, pollution will repeat and expulsion by pollution will also be reproduced.

Keywords: industrial park, expulsion by pollution, environmental struggle

1. Introduction

Since reform and opening-up in 1980s, the eastern coastal region has played a decisive role in China's industrial development but left behind the inland region in economic development (Yu, 2014). To reach the balance of regional industrial development, inter-regional industrial transfer, through the Program of Western Development and the Rise of Central China, has been promoted by Chinese central government since 2000. There are three trajectories behind the inter-regional industrial transfer: from eastern coast to central and western regions; from developed regions to less developed regions; from urban arear to countryside(Luo, 2010) . However, if taking a closer look, along with the inter-regional industrial transfer, what shifted actually are the "low-end industries abandoned on the coast" with the features of high pollution and resource consumption (Luo, 2010; Ang[1], 2017). Although the inter-regional industrial transfer in fact signals the flow of capital which looks for new spaces for accumulation, lots of inland governments "are far less selective" and embraces those industries with enthusiasm and favorable policies (Ang, 2017). With the backing of government support, many industrial zones/parks have sprung up especially in the counties of inland provinces. Albeit contribution to local economic growth, the transfer of industries with high pollution not only has led to farmland expropriation for industrial parks but also exerted social and ecological impact on the local communities.

Take Yongfeng County of Jiangxi Province in China as an example, from 2007 to 2008, the local county government has appropriated 1500 mu forestland from surrounding villages for building a industrial park. Until July of 2016, four factories has settled in the industrial park mainly for non-ferrous metals production such as Zinc, Lead, Copper and Aluminum. Due to the weak regulation of environment governance, those factories has caused water air and soil pollution which has badly affected the local communities. It has been found some villagers has abandoned their land because land productivity has been largely reduced by the pollution. Besides, local villagers dare not drink underground water from their wells and replace it with commodified bottled water from the market. What's more, to be away from polluted living environment, many children in the village have been sent to schools in the county. In a nutshell, due to the pollution brought by the industrial park, local people are expelled in an hidden and obscured way from their land, water and living space, which is defined as "expulsion by pollution" in this paper.

Expulsion are "made" while its character and contents vary in different context (Sassen, 2014). The discussion of expulsion by pollution in this paper tries to filling in two gaps in the previous agrarian studies. First, since the agrarian question is "whether and how capital is seizing hold of agriculture, revolutionizing it, making old forms of production and of property untenable and creating the necessity for new ones"(Kautsky, 1988), most studies of agrarian transition focus on the capital penetration into countryside for agricultural production but less attention has been put into rural industrial capital which is not involved in the agricultural production but has significant impact on the agroecology(Gerber, 2010; Akram-Lodhi and Kay, 2016;). Secondly, although expulsion has been received lots of academic attentions in agrarian studies, there are two main common features. On the one hand, expulsion is mostly driven by coercive force from state, capital or the alliance of them(Marx, 1999; Harvey, 2003; Melta etc., 2012; Hall, 2013; Andreas and Zhan, 2016). On the other hand, the outcome of expulsion is not only the separation of people from their land but also the transfer of land control which means the displaced people have lost their control over the land from where they are expelled away, or other resources they used to have access to(Melta etc., 2012; Hall, 2013; Andreas and Zhan, 2016). As Feldman and Geisler (2012) have put it, expulsion "is not readily perceived as coercive eviction at any given moment". Apart from the previous discussion, the paper aims to bring in another mode of expulsion which occurs in Jiangxi context mentioned above—expulsion by pollution, in which villagers expelled by pollution from their land and water however still have the control of those resources. Without the intervention of coercion to force them to leave their land or the penetration of capital to enclose their farmland, the industrial pollution, through reducing the use value of land, water and the natural environment for living, has driven villagers away

[1] http://www.socsci.uci.edu/newsevents/events/2017/2017-02-23-yuen-yuen-ang.php

and further shaped the agrarian change of local communities in a hidden way while easily obscured by active adaptation strategies of the affected villagers such as looking for more off-farm income, high-quality education and water.. What needs to be noted is that pollution doesn't result in expulsion in a direct way. Villagers are not passive victims and has resisted the expelling force by pollution. The causality of expulsion by pollution will be illustrated in the following sections.

Based on the fieldwork in Gao Village located in the northwestern part of Yongfeng County of Jiangxi Province in China during July to August in 2016, from the perspective of critical agrarian political economy, this paper aims to explore the drivers and mechanism underlying the mode of expulsion by pollution as well as its impact on the local agrarian change. This paper is structured as follows. The next section is the introduction of the development of industrial parks in Yongfeng County and mainly focuses on the driving force and mechanism of land expropriation for industrial parks which have provided the space for industries with high pollution. The third section explores how the local villagers respond against the industrial pollution, what are the outcomes and its implications for expulsion by pollution. The fourth section concentrates on mechanism of expulsion by pollution and its impact on local agrarian change. The fifth part is how the benefits and costs of industrial park are distributed among involved actors. The final section is conclusion and discussion.

2. State, capital, the rise of industrial parks and pollution

The acquisition of rural land plays an important part in the expansion of industrialization and urbanization. The rise of industrial parks is mostly translated into land use transfer from agricultural use to industrial use. Lots of scholars have paid much concern to the dispossession resulted from land acquisition, like Levien's (2013) study on special economic zone in India which has examined the underlying regime of dispossession. In the view of Hsing (2010), land dispossession in China is overwhelming for urban-industrial purposes. Despite all this, Borras et al.(2011) has pointed that land expropriation doesn't necessarily lead to the expulsion of peasants from their lands. However, incomplete dispossession doesn't mean the affected people are free from the impact from land grabbers and it has largely escaped the attention of scholars who have written extensively about land grabs. This section deals with the drivers and mechanism underlying the land acquisition for industrial parks in the context of Yongfeng County which doesn't resulted in dispossession.

(1) The rise of industrial parks in Yongfeng County

Yongfeng County is located in the Central part of Jiangxi Province in China. Jiangxi Province is an agricultural province in the central region of China with a long history. To facilitate economic restructuring and accelerate industrial development, on the 11th Provincial Congress of the Communist Party in 2001, Jiangxi government initiated the strategic plan of "three bases and one garden"(san ge ji di, yi ge hou hua yuan). In terms of the three bases, the first refers to the base of accommodating industrial transfer from eastern coast, the second for high quality agricultural products provision and the last for labor service export. With the backing of governmental support, the contribution of industry toward economic growth in Jiangxi keeps climbing. In 2003, the proportion of agricultural output has become lower than 20% for the first time(Huang, 2004). It further signals industry has become the main engine for economic growth in Jiangxi. Along with the economic achievement induced by industries, the expansion of industrial parks also have sped up.

The industrial park in Yongfeng County has been approved by the municipal government in 2001 and recognized as a provincial industrial park in 2006[2]. In 2011, the total revenue of the industrial park has already reached ten billions yuan. The revenue in 2013 is 18. 304 billion yuan and contributes 0.92 billion yuan tax revenue for the local government. The whole industrial park occupied 253.33 hectares

[2] http://www.jxyongfeng.gov.cn/html//855142875933.html

in 2006 and has expanded to 427.39 hectares in 2015. According to the development plan of industrial parks in Yongfeng County (2014-2020), the whole area of industrial parks will reach 1033 hectares by 2020. The land converted for industrial parks are mainly farmland. In Yongfeng County, the whole industrial zone are composed of three parks respectively located in the northern, southern and western part. Four main products in the industrial parks are calcium carbonate, medical chemical products, nonferrous metals and green food. Among them, the industries of calcium carbonate and nonferrous metals are the main pillar of the whole industrial park. The revenue of calcium carbonate and nonferrous metals production has accounted for 57.69% of the total revenue of the park in 2015. By 2013, 165 private companies had settled in the industrial park and two of them has been enlisted respectively in Hong Kong and South Korea.

The rise and expansion of industrial park in Yongfeng County has received strong support from local government. There are two incentives. One is the tax reform in 1994 which has reshuffled the tax revenue distribution between local and central governments and reduced the share for local government. It further has pushed local government to seek revenues on its own. The abolishment of agricultural land tax in 2006 has reinforced the incentives of the local governments for new source of revenues. The other reason is the local GDP growth has been an important criterion for official career advancement(Andreas and Zhan, 2016). Besides, local officials at a lower level are also facing pressure from higher level in the bureaucratic structure. To attract investment as political task have been assigned among local officials. Except the above, them main reason for the rapid industrialization in Yongfeng County is the favorable policies for investors such as tax refund, bank loans and access to land because Yongfeng does not have many competitive advantaged in transportation compared to many other counties. To facilitate the rise of industrial park, one administrative committee for industrial parks has been set up by the county government for providing exclusive service for investors. Based on the above, it is obvious that the local government has lowered the threshold to let the private capital to flow into industrial parks. The space for industrial park expansion is also created and provided by the local government.

(2) Land acquisition for the industrial park

To have a closer look at the process and the mechanisms behind the process of land acquisition for industrial parks, the following section will take western industrial park in Yongfeng County as an entry point.

The western industrial park was begun to build in 2008 and designed for industries of nonferrous metals production. The planning area for this park is 128 hectares. So far, 66 hectares has been put into use and five companies have moved in. Most investors of those companies are from coastal region of China, mainly from Zhejiang Province. The main products by those companies include zinc oxide, lead and copper. To build this industrial park, local government has expropriated 1500 mu forestland from Gao village which is in the suburban region of Yongfeng County. The location choice of western industrial park is based on rational calculation by the local government. In the interview with one township official, he said nonferrous metals producers were supposed to settle in southern industrial park. But many residential communities are close to southern industrial park. To minimize the impact of industrial pollution caused by nonferrous metal producers, county government has decided to shift all those producers to western industrial park around where “there are only several rural households”. In this sense, the shift of nonferrous metals producers in essence is the second transfer of pollution from the urban area to rural area. Another assumption behind the decision is those pollution makers are not located in the densely populated area so the impact of pollution is weak, which indicates local villagers are excluded from the eyesight of local government during the decision making process. During the interview in Gao village, no one expressed they have any idea about the concrete design and plan of western industrial park. The only thing they know is forthcoming industries could create job positions.

For local villagers, because smallholder farming cant guarantee a decent living, villagers wish to have off-farm income source near home. The appearance of industrial park has filled in local villagers' expectation. So the whole land acquisition process has not received much opposition. Only a few villagers disagreed to give up their forestland at the beginning but finally accepted because of the persuasion and pressure from the village leaders and the community. The narrative of employment creation is also used by local official during land expropriation. Land acquisition in Gao village for western industrial park has been completed in two times from 2006 to 2007. In total, 1600 mu forestland was expropriated. One villager recalled most people are quite happy about the industrial park and thought it was a good thing.

The other reason for the relatively peaceful process of land acquisition in Gao village is no farmland is involved. Local villagers still maintain their control of farmland. In many studies on land grab, dispossession comes along with the process of land acquisition. However, dispossession is not necessarily the result. Meanwhile, not all land grab will result in opposition and resistance. Besides resistance, the affected people may also choose to adapt (Natalia, 2015). In the context of Gao village, there is no dispossession by land acquisition. But it doesn't mean there is no any land conflicts. In fact, land shortage has become a bottleneck for the development of industrial parks. One director working for the administrative committee for industrial parks has complained it has become more and more difficult for government to expropriate land from villagers. "The context has changed. In 1990s, the government was more powerful and could manipulate everything. It was big state and small society. But now it has been upside-down. It is required the state to be small and put human right at the first place. So the development for industrial zone becomes difficult. It was government-profit centered but now should turn to be public-interest centered. Now its very hard to get land. The social environment is not good for corporations. The villagers could protest, but we cant. The villagers use different means to let the government meet their demand. Now the market is not good, high requirement on the corporations will increase their production cost. "

Between favoring capital accumulation and maintaining social stability, the local governments are seemingly trying to keep the balance but also have adopted lots of protection strategies toward private investor. In the context of wester industrial park, local government has weakened regulations on environmental protection for the nonferrous metals producers. It is also shown in the development planning for western industrial park (2014-2020) that there is only one sewage treatment plant and mainly used for household sewage treatment. So far, the one for industrial wastewater treatment is till under construction. To lower production cost, nonferrous metals producers even have discharged waste gas and water directly without any treatment, exerting huge adverse impacts on the agricultural production and living conditions of local people Although land acquisition for industrial parks has not resulted in the expulsion of local villagers from their land, pollution brought by the industrial park has triggered substantial changes in Gao village. The following section will focus on how villagers response to the industrial pollution.

3. The resistance against industrial pollution from below

Resistance assumes the sense of grievance but the later doesn't necessarily lead to the burst of overt struggles. Resistance is an also on-going process in which the actors and the political, social, economic and cultural structures they are embedded in shape and are reshaped by each other. The following section deals with local villagers' resistance against industrial pollution and focuses on when, why and how they resist and what are the outcomes and underlying mechanisms.

In 2008, two non-ferrous metal factories moved into western industrial park and began production from August. Two more factories came and started production in September of 2009. What those factories share in common is to discharge waste gas and water without treatment. Sulfur dioxide is the main pollutant in the waste gas. If the four factories keep running for 300 days one year, the emission of sulfur dioxide would reach 310 ton. Even in the development plan for industrial zone (2014-2020)

made by Yongfeng County government, "heavy pollution" is used to define those factories. The affected region of the pollution could extend to 10 km away from the factories.

However, villagers in Gao village has not realized the negative impact of pollution until they recognized the relation between the pollution and their withered rice crops. One villager recalled that in the June of 2009, a large area of rice crops in the village suddenly became withered. No one met this situation before and had no idea what happened to the crops, "the crops look like being sprayed herbicide and black spots have appeared on the crop leaves". Confused villagers consulted technicians working for the agro-technical station in the township and but no reasons had been found. In the following period, while more and more crops had become withered, some villagers found the flowing of waste water into their field. Other villagers also found the withering of crops is more severe during the rainy and foggy days and less when the factories stop production. Besides, more withered crops have been found in the field closer to the factories. The experience and observations of pollution has contributed to villagers' complaints towards factories. When their grievance travels to the ears of local government, the latter has assigned several technician to clarify whether the pollution is the main reason for withered crops. A comparative experiment has been carried out by several technicians and the result shows pollution is the main reason for withered crops. To ease villagers' grievance and based on negotiation, those factories have provided compensation in term of the yield loss and promise to avoid letting waste water flowing into villagers' fields which is caused by pipe leakage.

Nevertheless, during the second round of rice cultivation in September of 2009, villagers found rice crops withered again. To secure yield, several villagers went to the factories and claimed them to stop production because their crops were badly affected. But their claim was ignored by the factories and the latter kept on production. It is the failure of negotiation inflamed the anger from the villagers. What followed is sabotage by villagers. One villager recalled in the interview, "it was in the night, almost all the villagers rushed into the industrial park, flocked in to the biggest factory and smashed everything in its six-floor office building. " The struggle was ended with the oppression by the local government. About 700 policemen have been dispatched to evict villagers home. Besides, civil servants working in local government with social networks in Gao villager had been required to go to the village and calm down their relatives or friends. Otherwise, they would lose their jobs. Under the coercive oppression and pressure from social network, villagers left the industrial park. To avoid more struggles, the police has stayed in the village for two weeks, "there were two or three policemen standing in front of each household". At the end of September, several villagers who struggled most fiercely had been taken away by the police and detained for several months. Villagers with the fear to be detained became silent under the oppression. After the struggle, mediated by the local government, the factories have given 200,000 yuan to Gao village as compensation and donated exercise facilities in the village. However, the pollution persists.

Villagers' grievance against pollution has further been reinforced when they found their children's health and groundwater under the threat of pollution. In late 2009, many parents in Gao village noticed their children getting the problem of losing appetite for meals. After physical check, it has been found those children's blood lead levels have exceeded the normal standard. Out of the health concern, more parents have taken their children to hospitals for blood lead tests and found most children's blood lead leave are abnormally higher than the normal level. Meanwhile, one villager has taken local groundwater for quality test in the capital city of Jiangxi Province and the result shows the water is polluted and undrinkable. To avoid potential conflicts, the local government has propose to provide free blood lead test for children under 16 years old every year and milk for the ones who has high blood lead level. Although the test is free, villagers have lost their trust in local government because the test results have never been sent to villagers directly and it always takes long to get the results. Some villagers suspect the county government has revised the results deliberately for making the results to look normal. One villager commented, "they bully us and take us as idiots because we haven't received much education. They changed the number of 300 to 30, 340 to 40." Confronted with villagers' complaints and grievance, local government and factories only use compensation to appease them but the pollution still lasts. Along with this, villagers' trust in local governments has been reduced.

The distrust in local government has promoted villagers' petitions to central government. With the aim to close the factories and eradicate the pollution, villagers has made two petitions. The first petition was in November of 2009. To avoid the attention of local government, only four villagers as representatives went to Beijing with prepared documents from pictures of withered crops to children's blood lead test reports and water quality test result. After arrival in Beijing, they got up very early and began to stand in the line for submitting petition materials from 1 am in front of the department of letters and visits. However, around 6 am, several local officials from Yongfeng County appeared around the queue and persuaded the four villagers to go home. The four villagers insisted and finally submitted the documents successfully. But when they reached the county, young villagers among the four were taken away by the police. To attract more public support, one elder villager has turn to media for help and contacted with phoenix satellite television based in Hong Kong. In the program of Social Watch by phoenix TV, one report about the pollution has been delivered in October 2010. In the middle of 2010, villagers got a phone call from Beijing and were told the department has sent official instructions to local government to settle the pollution problem. Later on, the environment protection department at the County level organized a meeting in the township and granted Gao village 100,000 yuan in the name of funding for rural infrastructure constructions. Apart from this, Yongfeng government made a promise to villagers they would try to solve the pollution problem within two year. Lots of villagers have received one printed promise letter from the local government.

In the following two years, the pollution has been reduced to some degree but persists. Villagers found the factories have adjusted their strategy—to discharge waste gas and water during night. Although local department of environment protection claimed they has been monitoring the pollution, villagers have observed the waste gas emission during 1 am to 3 am. Induced by pollution, rice crops become withered every year while villagers' grievance keeps fermenting. In 2013, villagers made a second petition. All the 500 households in the village have donated money for the trip cost. What needs to be noted is all the attendants in this petition are elderly villagers from 60-70 years old. Because based on the lessons from previous struggles, they found young villagers are more likely to be detained by the police when caught for petition. Although found again by local official on their way to Beijing, they successfully submitted documents. Upon reaching back to Yongfeng County, those elderly villagers were taken to the police station for questioning without detainment. To appease villagers, Yongfeng government again granted 260,000 yuan to Gao village in the name of beautiful countryside construction in 2014. Meanwhile, the county government has organized a coordination group based in the industrial park to mediate the tensions between factories and villagers. Village leaders are required to keep an eye on villagers' petition organization. Otherwise, their salary will be cut. The continuing struggle of villagers has left their "bad" image in the eyes of local governments. The latter blames local villagers as "uneducated" and "rude". According to the former village leader, due to the bad image, Gao village has received less funding than other villages for the infrastructure construction. In a nutshell, villagers' second petition is ended again with compensation and failure to stop the pollution.

In terms of the on-going process of villagers' environmental struggles, there are several points need to be noted. First is villagers' awareness of pollution. Due to knowledge asymmetry, villagers' awareness of pollution is mostly formed after they suffer from pollution and recognize the causal relation between their suffering and the pollution. Knowledge plays a key role in the formation of pollution awareness and the latter is the very starting point for environmental struggle and closely influence whether the affected would choose to resist and against whom(Zhu, 2012). The importance of pollution awareness could be displayed when making comparison between environmental struggles by villagers and environmental struggles by urban residents. Most urban environmental struggles are mostly organized before the fact of pollution because urban residents have advantageous access to knowledge and information network. In contrast, rural environmental struggles tend to burst out after villagers are negatively affected by the pollution (Zhang, 2010). In the case of Gao village, villagers have no knowledge to foresee the pollution and even have the awareness of pollution one year after the appearance of pollution. Many villagers said during interview "if we had known those factories would cause pollution, we would have not let them to settle in ". It also implies they are totally excluded from the decision-making and planning process of industrial park.

The second is the trigger for villagers' grievance to resistance, and the diversified strategies villagers switched in the struggling process. There are two main schools among the studies on environmental struggles. One focused on the structural factors shaping the opportunities and spaces for environmental struggles such as political opportunity structures(Tong, 2013; Zhu, 2013). This structuralism school could explain the structural space which shapes the choice of struggle strategies but cant explain how grievance has been transferred to struggle. The other is more interested in the agency of actors in resistance and concentrates on modes of strategies actors have used, like everyday resistance(Scott, 1977) and rightful resistance(O'Brien and Li, 2006). However, none of those strategy models can fully catch the complexity of the struggle process in reality. Because actors are not static subjects, they wont just follow one model of resistance strategy but make combination of different strategies in different contexts. In the case of Gao village, when villagers found the pollution is caused by factories, they have strong grievance against factories but they didn't choose to struggle at the first stage. What they have done is to do mediation and expect factories to stop pollution. After the mediation, factories compensated and promised to avoid pollution. The process of negotiation reflects the customary rules in traditional countryside society in China influenced by Confucianism of non-litigation. In terms of traditional practice, when disputes occur in rural community, villagers prefer mediation first. In the case of Gao village, villagers also followed the practice and mediated with factories. It's the refusal of factories to follow their promise in the previous mediation triggered villagers' sabotage because villagers fount their customary rules have no restraints on factories. The fact of pollution per se has not immediately led to villagers environmental struggles but the violation of traditional practice by factories activated villagers' grievance to struggle. The ineffectiveness of customary rules has promoted them to turn to laws and official policies as new weapon—making petitions. The weapon of age and help from media is also smartly used by villagers to avoid the risk of detainment. The switch of different struggle strategies reveals villagers are not static subjects. They would make full use of their agency to learn and adjust new ways to resist and adopt different strategies under the social political structure they are embedded in, rather than following one linear mode of resistance strategy.

The third is the role of clan culture in the mobilization of environmental struggle. In Gao village, more than 90% villagers share the same family name. In the village, there is one ancestral hall which is the cultural center where villagers chat and watch traditional dramas together in daily life. While reinforcing villagers' identification with the whole community, clan culture has facilitated the collective struggle mobilization since the whole community is under the threat of pollution (Jing, 2009; Tong, 2011). This is also exemplified by the donations by each household for trip cost in the second petition. Besides, clan culture emphasizes the perpetuating of family name and has more concerns over children's health(Jing, 2009). When children were found having high blood lead level, villagers' grievance has grew. Although adults in the village are also confronted with the health risk posed by pollution, very few adults have taken the blood lead test and value children's health more themselves. Among the documents for petition, only children's blood lead test reports have been presented.

Besides Gao village, there are many more villagers in China involving environmental struggles against industrial pollution especially after marketization reform. However, their struggle and resistance mostly end with failure. Many villagers expressed their disappointment and grievance, "it (petition) is useless, what we can do is waiting for death in the pollution." In fact, industrial pollution in countryside China not only repeats but even become severer. In western industrial park, despite villagers' ongoing resistance, one more factory has appeared in 2012. So how to understand the repeated failure in environmental struggles? what is the underlying mechanism of industrial pollution reproduction in rural China and how will it affect agrarian change?

4. Expulsion by pollution: mechanism and effects

Since villagers' resistances have not changed the status quo of pollution, they have to adapt to it. However, it is also the adaptation which has obscured the mechanism of industrial pollution reproduction, expulsion by pollution and its impact on agrarian change in local communities.

As mentioned in the beginning of this paper, most factories in western industrial park are abandoned by the coastal provinces and attracted by local governments in middle and western provinces. The inter-regional industrial transfer in fact is pollution transfer. Why the pollution is tolerated and silently approved by local governments is closely related to its neoliberal turn and doctrine of developmentalism. The motivation of local government to accelerate economic growth is largely shaped by pressure from central government. Tax distribution reform in 1994 and the cancellation of agricultural tax in 2006 substantially reduced the tax revenue for local government. Lacking endogenous force of economic growth, many local governments turn to attract capital from outside. Although those flowing capital has contributed to local economic growth, it is based on the social and ecological cost of local communities. The developmentalist regime is the engine for most industrial pollution in rural China. Without alteration of this regime, industrial pollution in countryside will probably persist and be reproduced in the existing political structure in which local governments prefer to protect industries with high pollution emission than local villagers.

Besides, local governments are not just instruments to implement the policies, they also have agencies and interests. Interest differentiation or conflicts also exist between governments. In recent years, Chinese central government has began to emphasize the importance of environmental protection and issued lots of policies and documents which are quoted and used by lots of villagers in their rightful resistance. That means the policy discourses from central government has provided legitimacy and political opportunity for villagers' environmental struggles. However, from the viewpoint of Zhu (2014), this political opportunity is just symbolic because it only provides hopes for villagers to continue environmental struggles but can't root out the problem. Even though the petitions about environmental struggles are heard by the central government, the problem will be sent back to local government whose interest is deeply embedded in the alliance with private investors who would like to realize accumulation with low costs. This is also one major structural reason for the repetition of failures in villagers' environmental struggles. The regime of developmentalism is the systematic dynamic for pollution reproduction, which further expelling people away from their land, water and living space.

(1) Farming abandonment

In lots of agrarian studies, displacement of local peasants is recurrent in the context of capital penetration into countryside but the expulsion of people away from their land by pollution has not received deserved attention.

Due to the industrial pollution, rice production in Gao villager has been reduced. The average rice yield per mu used to be around 450 kg but now just 250 kg. To save more yield from pollution, villagers have tried to use various kinds of fertilizer and pesticides which they never used so much before the appearance of pollution. One villager said, "since the soil has been damaged by pollution, we have to secure the yield by management (which means the use of pesticide and fertilizer). Otherwise, we even could not harvest 250 kg rice per mu." Because of the reduction of agricultural productivity caused by pollution, together with the squeeze from the rise of input cost and low yield, the phenomenon of farmland abandonment has begun to appear in Gao village. When the fieldwork was conducted, 10 mu farmland close to the factories has already been left aside. Another villager complained, "due to the pollution, we cant make ends meet by farming. What we can do is to escape and to be migrant labor ". In Gao village, before the pollution, most young people have migrated into cities as labor workers under economic compulsion while the left-behind elderly and women maintain farming at home. Although farming could not bring lots of economic benefits to villagers, it could provide food, a relatively steady income flow and reserve for labors who cant find stable job opportunities or settle down in cities (Andreas and Zhan, 2016). However, the industrial pollution in Gao village is reducing the choice for migrant labors to go back for farming since the land productivity has damaged by pollution. It not only increases the livelihood risks of migrant workers in cities, but also accelerates the proletarianiation of villagers. Nevertheless, this potential transition trend

is easily obscured by villagers' factual control of useless land resulted from pollution and their voluntary migration to cities for better income.

Besides, the formation of middle farmers which could be the potential force of "capitalism from below" is disrupted by the pollution. In Gao village, there exists voluntary land transfer between villagers. It is usually the villagers who migrates to cities as labor worker don't have enough labor in the left-behind family and transfer land to other villagers. This kind of land transfer is mostly based on oral contract and no rent is charged. The land owners could get their land back whenever they decide to go back for farming. However, the expulsion by pollution tends to drive more people away from their land and make their life more dependable on labor market.

Besides farmland abandonment, lots of villagers still continue farming on the polluted land. The major reason is they don't have alternatives to cover food demand if abandoning farming. One elderly villager said he cant abandon farming because the school fee for his grandchildren will increase in the new semester. Although the yield will be reduced, it is better than nothing and food provision at least for himself could be secured. Otherwise, he needs money to buy food from market. Because of the pollution, many villagers dare not eat the rice they produce on the polluted land and sell their own rice at a low price and purchase rice from market. Nevertheless, there are still villagers who cant afford the rice from market and consume their own rice, which further enhanced their health risk. What's more, market circulation of the polluted rice also extends health threat to more people.

(2) Sending children away to escape pollution

When it has been found industrial pollution leads to children's high blood lead level and the situation couldn't be changed in a short term, villagers have began to send their children to county or relatives' place far away from Gao village. Those children are around 2 to 12 years old and most of them are left-behind children whose parents work in the cities as migrant labor. Staying in the village, they are under the care of grandparents or other family relatives. There are two main reasons why those migrant workers in Gao village don't take children to their working cities. One is economic constraint in that it is difficult for them to settle down and afford children's education cost in cites. The second is the urban education policy constraint because urban public schools are almost exclusively for children with urban households while the enrollment of rural children will charge lots of extra money. Under economic pressure, most migrant workers choose to leave children in the village to receive education. There is one primary school in Gao village which only had 20 students left from 2010 to 2011. According to one teacher working in the village school, about 100 households have taken their children to the county school to be away from the industrial pollution. The drop of student enrollment also has occurred to the township primary school which is only 3 km from the industrial park and taken as under the threat of industrial pollution. The township primary school used to have 1100 students but only 600 students remained in 2010.

Gao village is 16 km from the county. It is not easy to let rural children study in the county. For the rural children's enrollment in county school, either urban household or owing a house in county is needed in terms of the local policy. To facilitate children's education, many villagers have to buy a house in the county. In 2016, the house price in the county is about 5000 yuan per square meter. However, the monthly income of migrant workers is only about 3359 yuan[3] on average. Only quite a few villagers could afford a house in the county. Since the children still need family care in the county, most villagers choose to rent a house and let grandmothers to stay with the children while the grandfathers stay in the village to look after the house and do farming. Pushed by industrial pollution, not only the labor division inside the left-behind family has been changed but the household expenditure increased. All the villagers during the interview claimed that "If there was no pollution, no one will send children to county school." Beside, not all the affected villager by pollution could

[3] http://society.people.com.cn/n1/2016/0428/c1008-28311721.html

afford the rent and living expense in county. The poor have to stay and bear the pollution. One child commented, "only the rich family can move to the county."

According to the village school teacher, many villagers has begun to take their children back from the county since 2013. There were around 50 households who still stay in the county until August of 2016. The main reason for villagers' return is the living expense in county becomes higher and higher. There is one grandmother, 53 years old, taking care of two grandchildren in the county primary school. She said, "life is very hard. It costs at least 20000 yuan one year in the county. If there was no pollution, we needn't spend so much money. Everything needs money, such house rent, electricity, water and food. my son and his wife are just migrant labors and they cannot earn much money." As age grows, she feels the economic pressure more and more heavy. As for the children, they also face the integration and adaptation problem after the shift from village school to county school. One 8-year-old boy from Gao village enrolled in the county primary school said, he is the only one from countryside in his class and no classmate wants to play with him. He even feels lonely at school and plays by himself. His school performance at the village school was quite well but becomes worse in the county school. He said after grow-up he doesn't want to be a peasant(wo zhang da le bu xiang dang nong min ren).

(3) Replacing polluted water with commodified water

The water source for daily use in Gao village used to be groundwater. Almost each household owns one well in their yard. In 2009, one villager has made a water quality test and the result shows the local groundwater is no longer drinkable due to the pollution. One villager has complained, "living in the village is just like taking poison". Out of health concern, villagers have stopped using groundwater for drinking. Instead, they buy bottled water from local market. The industrial pollution not only has provided justification for the commodified water but also created space for the penetration of commodified water into countryside. While the industrial factories through pollution drive villagers away from the access to local safe common water resource, villagers are locked into the value chain of commodified water. Villagers need to spend about 20 yuan every month for bottled water to meet the demand of four family members(two grandparents and two grandchildren). What needs to note is villagers only use the commodified water for drinking and still use local groundwater for cleaning and cooking. As one villager comments, no one can afford commodified water for all the water demand within the household. Besides, although the commodified water could secure villagers from pollution to some extent, the price tag excludes away those who can not afford. During observation in fieldwork in 2016, there are still lots of villagers using local groundwater as drinking water and other household demands. They has chosen to ignore water pollution under economic compulsion. Their tolerance of polluted water is partly because they don't have got obvious negative impact. Nevertheless, the health impact and risk caused by pollution in large extent is not reversible and easily drag rural families into poverty.

At first glance, farming abandonment, sending children to county school and the adoption of commodified water are active choice made by villagers. It could be understood as villagers want a better cash income source in cities, better education for children and high quality water. But a closer look will disclose the invisible external structural forces which expel villagers away from the access to sustainable farming environment, education resource near home and safe water for daily use. The center in the structural forces is the alliance of local developmentalist government and private investors . The expulsion by pollution will persist if there is no change of the underlying power structure.

5. Winners and losers of the industrial park

The industrial parks have contributed a lot to economic growth in Yongfeng County. However, what need to quest behind the rapid growth is who gets what, who loses what and how the benefits and costs are distributed.

(1) Questioning the narrative of Job creation

During the process of land expropriation for western industrial park, local officials have advocated the benefits of industrial park development among villagers, " it will created more job opportunities for rural surplus population ". Although it has provide the legitimacy of land expropriation, villagers haven't benefited much but have to bear the impact of pollution. Before villagers had the awareness of industrial pollution, many young villagers who has migrated out returned home with the hope to work near home. However, when the pollution has been recognized, those young people left home again because many villagers who have worked for the factories later on has got health issues. Very few villagers would like to risk their health for working in the factories. Even though there are villagers working for factories, the work is mainly about infrastructure contribution such as road and storehouse building. Besides, after the villagers' sabotage in the factory, factory owners dislike employing local villagers with the aim to avoid further potential collective sabotage. Instead, they prefer migrant labor workers from Henan and Sichuan Province because when disputes or conflicts occur its not easy for them to get community support for collective struggle organization since they are far from hometown.

(2) Elite capture: uneven distribution of benefit within the community

The appearance of industrial park has also accelerated the social differentiation in the village. In 2013, to appease villagers' grievance, one manager working in the industrial park proposed to open a service agency company by Gao village committee. When factories need labor for infrastructure construction project like warehouse and road building, the agency company could help to subcontract the project and charge service fee. The company was set up in 2013 and has earned a lot of money in the first two years. Its saving has reached 300000 yuan at the end of 2014. Because the company is collectively owned, the earning has been used to cover the public expenses in the village such as hospital, road construction, ancestral hall repair, paying medical care insurance for all the villagers (60 yuan per person one year). But lots of villagers are not satisfied about this, "it is too little".

The main reason why villagers are not satisfied with the company is that most subcontracted projects go to the hands of a few rich villagers who get richer and richer. And the richer they are, more chances they have to win the bid for projects. During the process of project implementation, they prefer to employ their close relatives and friends. So most villagers could not benefit and they complain that if the village committee could take over the projects then all villagers could benefit. Those rich villagers later become absentee villagers because they bought new houses in the county to avoid pollution, while villagers staying in the village have to bear the negative impact of pollution. The unequal benefit from the factories' projects has widened the economic gap among villagers. Many villagers also expressed their grievance against the absentee ones, "we even cant survive in the village while they are making money by contracting projects from factories." However, to reduce costs, those factories have begun to stop giving projects to the service agency company from 2015. They claim the villagers are not professional for the project implementation. Meanwhile, they give the projects to project teams from other places who offer low bid. Even though the service company could bring benefit to villagers, the benefit becomes less and less.

(3) The pollution impact beyond the region

The factories in the industrial park not only have caused air pollution but also water pollution. Several factories discharge waste water without treatment to the river from where villagers divert water for irrigation. Because of the fluidity of water, the industrial pollution exerts negative impact on the livelihood and health of people in a wider region. There are two villages in the downstream of Gao

village. Their agricultural production has been also reduced by the pollution. Villagers from these two villages have protested against the factories. But factories argue they haven't used their land so there is no reason for compensation. The argument of factories also reveals the problem of separation of water and land governance which easily leads to the neglect of water problem induced by land use. In fact, through water flowing, all the water users in the downstream are actually under the livelihood and health threat by the pollution.

Besides, those factories in western industrial park purchase raw materials outside the village and sell products outside the local market. Except contributing to tax revenue for local government, they have a weak connection with the local economy of rural communities. In fact, what those factories need in the village is just their land and the spatial space for capital accumulation at a low cost. Local villagers are losing their land, water, health and a safe living environment while the capital are making profits.

6. Conclusion and discussion

This paper has explored the dynamic and mechanism underlying expulsion by pollution in the context of industrial park in rural China. Expulsion by pollution as an form of masked expulsion has not received deserved academic attention. The case of Gao village is not isolated and actually a miniature of many other villages suffering from industrial pollution in China. Expulsion by pollution is made and embedded in the power interplay between state, capital and peasants. Economic-centered developmentalist states is the main engine for the rise of industrial parks. The interest differentiation between central government and local government has provided the motivator for local government to attract investment and offer capital-favorable polices. Attracted by the weak regulation on environment protection, capital abandoned in the costal region has sped up its flow into central and western region in China. Although those capitals have contributed a lot to local economic growth, it is based on the interest of livelihoods and health of local communities. Although villagers are not passive victims and have adopted various resistance strategies, the space for them to struggle and achieve success is confined and shaped by the existing power structure in which local villagers, capital and local government are embedded. If the unequal structure cannot be altered, villagers' environmental struggle might repeat failure.

By polluting air, water and soil, industrial factories are expelling people away from their farmland, water and living space. Despite villagers still own the control over their farmland and water resources, those controls are meaningless since their use value has been destroyed. Besides, although pollution persists, not all villagers have the same experience of pollution because the rich ones could move to counties and cities while the poor who cant afford a new house in the county have to stay in the village and live with pollution. In a word, the capital with the support of local government continue its accumulation at the expense of the local social and ecological costs. It further has more implications for the local agrarian change. Pollution brought by the industrial factories has been destroying local agroecology, reducing land and water use value and turning them into wasted land and water. While capital has the ability to look for other new spaces to accumulate, it is very difficult especially for the poor to run away from pollution. Their livelihood and physical health are put into a risky position. The destruction of local agroecology by pollution is also reducing the possibility for migrant workers to return to do farming, which would further accelerate proletarianization of rural labor. Without out the alternation in the regime of developmentalist government and its alliance with capital, pollution will repeat and expulsion by pollution will also be reproduced.

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