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The Industrialization of Agriculture and its Consequences for the Natural Environment: An Inter-German Comparative Perspective

*Arnd Bauerkämper**

Abstract: Both German states saw a major trend towards agricultural modernization after 1945, though to a different extent. Likewise, the environmental consequences of industrialized agriculture were remarkably similar in both countries. However, the Federal Republic and the GDR differed in both the extent of the environmental hazards and the approach towards abatement. In the GDR, an open discussion of the environmental problems of industrialized agriculture was almost nonexistent. In the 1970s and 1980s, the eutrophication of surface water and the contamination of groundwater with fertilizers and pesticides increased significantly, as did the compression of the soil due to heavy machinery and water and wind erosion. However, the East German government suppressed an open discussion of the environmental impact of large agricultural production units. In contrast, these consequences were discussed openly in the Federal Republic; the intensive, specialized animal production in northwestern Lower Saxony provides an example. However, environmental activists did not achieve limited corrections of the general policy of agricultural modernization until the 1980s, with traditions of agricultural modernization remaining stronger in East Germany than in the West.

In the wake of the BSE crisis that shook Germany in 2000 and 2001, historian Wolfram Pyta characterized the general situation of rural communities as follows: "Satellite dishes have taken the place of the weathercock on top of the church steeple. The small town has lost the smell of cow and horse manure and now embraces the exhalations of high-powered vehicles. Against this back-

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ground, actual farmers make for an almost folkloristic addition – and their work seems to have totally lost the charming touch of being rooted in nature and the land.”¹ In the industrial countries of the twentieth century, the deruralization of the countryside went hand in hand with a progressive dissolution of natural cycles in agricultural production. More generally, deruralization was part of an overarching process that Josef Mooser has referred to as “deagrarianization”, meaning that agriculture was more and more subordinated to the general interests of industrial society in general and mass consumption in particular.² The result was a fundamental “transformation of the goals of agricultural policy from a protectionist policy in the interest of the producers to a nutrition-oriented consumer policy.”³ At the same time, industrialized agriculture has had an ever-increasing impact on the natural environment in all industrialized countries since the 1950s. However, these consequences of industrialized agricultural production were not the subject of intensive discussion in the Federal Republic of Germany until the 1970s. In the German Democratic Republic, political pressure prevented an open discussion of these environmental hazards until the revolution of 1989.⁴

In both German states, environmental problems were the result of an excessive – in the case of the GDR, even hypertrophied – policy of industrializing agriculture. Thus, this article needs to consider political concepts and measures as well as the changes of agriculture and rural society which they induced. After some general remarks on the tensions between agricultural modernization and environmentally friendly agricultural production, this contribution deals with the consequences of the collectivization of agriculture in the GDR and the transformation of farm structures in the Federal Republic of Germany in the 1950s and early 1960s. In the following chapters, the article analyses the accelerated transition to agro-industrial complexes since the mid-1960s. The general aim is to describe, by way of an asymmetric comparison with the Federal Republic, the specifics of the megalomaniac agricultural policy of the GDR and its consequences for the natural environment.⁵ This approach is based on the

¹ Wolfram Pyta, “Bauern, Brauchtum, BSE,” *Die Zeit* no. 5 (January 25, 2001), p. 9. On the disastrous impact of BSE on Britain, see Alun Hawkins, *The Death of Rural England. A Social History of the Countryside since 1900* (London, 2003), pp. 218-227.

² Josef Mooser, “Das Verschwinden der Bauern. Überlegungen zur Sozialgeschichte der ‘Entagrarisierung’ und Modernisierung der Landwirtschaft im 20. Jahrhundert,” Daniela Münkler (ed.), *Der lange Abschied vom Agrarland. Agrarpolitik, Landwirtschaft und ländliche Gesellschaft zwischen Weimar und Bonn* (Göttingen, 2000), pp. 23-35; Josef Mooser, “Kommentar,” Matthias Frese, Michael Prinz (eds.), *Politische Zäsuren und gesellschaftlicher Wandel im 20. Jahrhundert* (Paderborn, 1996), pp. 393-398; Josef Mooser, “Wir sind so hungrig,” *Frankfurter Allgemeine Zeitung* no. 17 (January 20, 2001), p. II.

³ Mooser, “Kommentar”, p. 393

⁴ Cf. Volker Klemm, *Korruption und Amtsmissbrauch in der DDR* (Stuttgart, 1991), pp. 170, 172.

⁵ On the methodology of asymmetric comparisons, see Jürgen Kocka, “Asymmetrical Historical Comparison: The Case of the German *Sonderweg*,” *History and Theory* 38 (1999),

general methodological postulate to enrich historiographic inquiries on the GDR by a comparative discussion of the Federal Republic in order to identify general characteristics of modern industrial societies as well as East German specifics.⁶ Linkages deserve some attention as well, as “interconnection and delimitation”⁷ or “delimitation within interconnection”⁸ are typical of developments in both German states.

1. Agricultural Policy in the Two German States: The General Context

With the frontline of the cold war running between the Federal Republic and the GDR, agricultural policy was inevitably part of a general pattern of political and communicative demarcation in both German states. The two opposing governments claimed to pursue a policy of modernization that was superior both economically and socially. In West Germany, a land reform failed partially, though not solely, as a result of foreign objections. While the Western Allies had favored a land reform as a matter of principle during the first years of occupation, they changed their minds as a result of food shortages and the escalation of the cold war, with the rigorous confiscation and redistribution of land in East Germany providing an alarming precedent. The wholesale confiscation of property without compensation obviously violated fundamental principles of the rule of law, even more so since the owners could not effectively raise an objection. At the same time, the significant economic burden of the land reform confirmed the doubts of West German critics within the conservative parties

pp. 40-50; p. 49, as a response to Thomas Welskopp, “Stolpersteine auf dem Königsweg. Methodenkritische Anmerkungen zum internationalen Vergleich in der Gesellschaftsgeschichte,” *Archiv für Sozialgeschichte* 35 (1995), pp. 339-367; pp. 357-359, 365.

⁶ Cf. Hartmut Kaelble, *Der historische Vergleich. Eine Einführung zum 19. und 20. Jahrhundert* (Frankfurt, 1999), pp. 26-35, 44n; Heinz-Gerhard Haupt, Jürgen Kocka, “Historischer Vergleich: Methoden, Aufgaben, Probleme. Eine Einleitung,” Haupt, Kocka (eds.), *Geschichte und Vergleich. Aufsätze und Ergebnisse international vergleichender Geschichtsschreibung* (Frankfurt, 1996), pp. 9-45; pp. 11-13, 15n.

⁷ Christoph Kleßmann, “Verflechtung und Abgrenzung. Aspekte der geteilten und zusammengehörigen deutschen Nachkriegsgeschichte,” *Aus Politik und Zeitgeschichte* B 29/30 (July 16, 1993), pp. 30-41.

⁸ Arnd Bauerkämper, Martin Sabrow, Bernd Stöver, “Einleitung. Die doppelte deutsche Zeitgeschichte,” Bauerkämper et al (eds.), *Doppelte Zeitgeschichte. Deutsch-deutsche Beziehungen 1945-1990*. Fs. Christoph Kleßmann (Bonn, 1998), pp. 9-16; p. 13. Cf. also Lutz Niethammer, “Methodische Überlegungen zur deutschen Nachkriegsgeschichte. Doppelgeschichte, Nationalgeschichte oder asymmetrisch verflochtene Parallelgeschichte?” Christoph Kleßmann, Hans Misselwitz, Günter Wichert (eds.), *Deutsche Vergangenheiten – eine gemeinsame Herausforderung. Der schwierige Umgang mit der doppelten Nachkriegsgeschichte* (Berlin, 1999), pp. 307-327.

and the farmers' associations. As a result, the redistribution of agricultural land disappeared from the political agenda in West Germany.⁹

Since the 1950s, the key issues in the inter-German agricultural dispute were collectivization in the GDR and the transformation of farm structures in the Federal Republic. Both countries charged each other with "the expropriation of peasants' land" (*Bauernlegen*), an allusion to the confiscation of peasant property by feudal landowners in early modern Germany that was meant to delegitimize the other side's policy. These mutual attacks provide a prime example of how both sides were intrinsically tied to each other. "Delimitation within interconnection"¹⁰ became a key feature of the inter-German discourse, not only in the field of agriculture. Characteristically, the decision of the East German *Volkskammer* (the token parliament of the GDR) of April 25, 1960, which marked the official end of collectivization, was phrased as the farmers' pledge of allegiance to the GDR and as an act of resistance towards the structural changes under way in the Federal Republic: "The transition of all GDR farmers to co-operative production is truly a plebiscite for peace, progress, and socialism, against nuclear armament, militarism, and preparation for war in West Germany, and for a solution of the German question. At the same time, it is a sharp protest of our farmers against the Federal Republic's agricultural policy with its strong anti-farming bias and the *Bauernlegen* in West Germany."¹¹ At

⁹ Arnd Bauerkämper, "Legitimation durch Abgrenzung. Interpretationen der Bodenreform und Kollektivierung im Kontext der deutschen Teilung und Vereinigung," *Beiträge zur Geschichte der Arbeiterbewegung* 38 (1996), no. 4, pp. 36-69; pp. 36-39; Kleßmann, "Verflechtung", p. 34; on the plans for land reform in the American zone, see Ulrich Enders, *Die Bodenreform in der amerikanischen Besatzungszone 1945-1949 unter besonderer Berücksichtigung Bayerns* (Ostfildern, 1982); on the British zone, see Günter J. Trittel, "Das Scheitern der Bodenreform im 'Schatten des Hungers'," Josef Foschepoth, Rolf Steininger (eds.), *Die britische Deutschland- und Besatzungspolitik 1945-1949* (Paderborn, 1985), pp. 153-170; Günter J. Trittel, "'Siedlung' statt 'Bodenreform'. Die Erhaltung der Agrarstruktur in Westdeutschland (1948/49)," *Zeitschrift für Agrargeschichte und Agrarsoziologie* 27 (1979), pp. 181-207; Günter J. Trittel, "Die Bodenreform – ein Beitrag der Besatzungsmächte zur gesellschaftlichen Strukturreform Nachkriegsdeutschlands 1945-1949," *Zeitschrift für Agrargeschichte und Agrarsoziologie* 30 (1982), pp. 28-47; Wilfried Feldenkirchen, "Agrarpolitik im Nachkriegsdeutschland: Leitbilder und Ziele der deutschen Politiker, Parteien und Interessenvertretungen," Hans-Jürgen Gerhard (ed.), *Struktur und Dimension. Fs. Karl Heinrich Kaufhold* (vol. 2, Stuttgart, 1997), pp. 266-291; pp. 270, 275n, 285, 289.

¹⁰ Bauerkämper et al, "Einleitung," p. 15.

¹¹ Walter Ulbricht, *Die Bauernbefreiung in der Deutschen Demokratischen Republik. Vol. 2: Juli 1958 – Dezember 1960* (Berlin [East], 1962), p. 1161. On the resolution of the *Volkskammer*, see Siegfried Kuntsche, "Die Umgestaltung der Eigentumsverhältnisse und der Produktionsstruktur in der Landwirtschaft," Dietmar Keller et al (eds.), *Ansichten zur Geschichte der DDR. Vol. 1* (Bonn, 1993), pp. 191-210; p. 204. On the protest of bishops, see Ulrich Mähler, *Kleine Geschichte der DDR* (Munich, 1998), p. 94n. Also see Christel Nehrig, "Im Osten propagiert, im Westen diffamiert. Die Kollektivierung der Landwirtschaft in der DDR," *Unsere Medien – Unsere Republik 2. Edited by Adolf-Grimme-Institut*, issue 3 (1992), pp. 14-16; p. 14; and Bauerkämper, "Legitimation", pp. 64n.

the same time, West German politicians were voicing a very similar critique of the GDR's agricultural policy, while West Germany, after the passage of the seminal Farm Act (*Landwirtschaftsgesetz*) of 1955 and the conferences of Messina in the same year and Venice in 1956, was hesitantly moving towards a consolidation of agricultural policy within the European Economic Community (EEC). For example, Carlo Schmid, a prominent member of the Social Democratic Party and president of the West German parliament, attacked the forced collectivization in the GDR in an official declaration of April 6, 1960, as a "new *Bauernlegen*." In West Germany, collectivization was flatly perceived as a "Sovietization," thus fueling anticommunist sentiments.¹² Up to the 1980s, agricultural policy was a key component of modernist discourses in both states, with both claiming to pursue the right path in the transformation of agriculture. This general context provides an explanation for the enduring prominence of the family farm as a model in West Germany even while the family farm was constantly eroding in practice. It also explains the enduring sympathy for large agro-industrial collectives in the East in spite of a growing realization that they were both economically dysfunctional and, as internal studies showed, extremely hazardous to the natural environment.

2. Utopias of Agricultural Modernization and the Goal of a Reliable Food Supply

Far-reaching claims to power and visions of near-omnipotence were hallmarks of the agricultural policy of the GDR. Thus, the writer Erich Loest described the situation as follows, "Some agricultural commanders (*Landwirtschaftsbe-fehlshaber*) had dozens of villages under their command. Their empire ended only with the horizon, and on their territory, they moved brigades back and forth, and when one of them had one thousand cattle in the barn, the next one

¹² Cf. Ulrich Kluge, *Vierzig Jahre Agrarpolitik in der Bundesrepublik Deutschland*. Vol. 1 (Hamburg, 1989), pp. S. 227-236; *Die Vernichtung des selbständigen Bauernstandes in der Sowjetzone. Eine Dokumentarschau im Auftrage des Bundesministeriums für gesamtdeutsche Fragen, zusammengestellt vom Büro Bonner Berichte* (Bonn, 1964); *Die Zwangskollektivierung des selbständigen Bauernstandes in Mitteldeutschland*, hg. vom Bundesministerium für Gesamtdeutsche Fragen (Bonn, 1960) (quotation pp. 7n); Adolf Weber, "Umgestaltung der Eigentumsverhältnisse und der Produktionsstruktur in der Landwirtschaft der DDR," *Materialien der Enquete-Kommission „Aufarbeitung der Geschichte und Folgen der SED-Diktatur in Deutschland“* (12. Wahlperiode des Deutschen Bundestages). Hg. vom Deutschen Bundestag. Vol. II/4: *Machtstrukturen und Entscheidungsmechanismen im SED-Staat und die Frage der Verantwortung* (Baden-Baden, 1995), pp. 2809-2888; pp. 2868, 2870. On the Federal Republic and the EEC, see Ulrich Kluge, "Wege europäischer Agrarintegration 1950-1957," Ludolf Herbst et al (eds.), *Vom Marshallplan zur EWG. Die Eingliederung der Bundesrepublik Deutschland in die westliche Welt* (Munich, 1990), pp. 301-311.

was seeking to trump him with five thousand, and another one with ten thousand cattle.”¹³ The unrestrained voluntarism and technicism of Stalinist dictatorships left a marked imprint on the industrialization of agriculture in the GDR, as did the enduring Cold-War conflict with the Federal Republic. Beginning in the Soviet Union in the early 1930s, Stalinism aimed at a conditioning of the natural environment in light of the demands of the “new man” and communist society. In spite of obvious links to the ambivalence of modernity and the “hubris of internal and external usurpation of authority (*Weltbemächtigung*),” this attitude implied a peculiarly strong aggressive potential.¹⁴ Adoration of science, techno-euphoria and rational planning were inherent in Marxist thought, and these became even more pronounced in Stalinism, culminating in an ideology of forced modernization that defined universal industrialization as a precondition of progress.¹⁵ Even more, the goal was to annihilate the contrast between city and country, already identified by Karl Marx as an important dimension of social inequality.¹⁶ Leading state and party officials in the GDR hoped to create equal living conditions in city and country through a conditioning of nature and a housing policy that was as extensive as it was reckless.¹⁷

The government’s unrestrained voluntarism and belief in progress found its expression in the doctrine of “class warfare” that was directed not only against political enemies but also against nature. Natural obstacles thus became objects of Stalinist policy. The claim to manipulate nature went hand in hand with a cult of modernity that implied both a humanization of nature and a naturalization of societal and political conflicts.¹⁸ Soviet agricultural policy still echoed this ideology in the 1950s with oversized irrigation projects and a reckless exploitation of the soil, the use of pesticides and fertilizers, and campaigns for the cultivation of cotton and corn. Situated on the frontline of the Cold War, the GDR was prominently exposed to the appeal of the economic success of the Federal Republic since the 1950s, making the guarantee of a reliable food

¹³ Erich Loest, *Der Zorn des Schafes. Aus meinem Tagewerk* (Munich, 1993 [1st edition Künzelsau, 1990]), p. 23.

¹⁴ Detlev J.K. Peukert, “Das Janusgesicht der Moderne,” Peukert, *Max Webers Diagnose der Moderne* (Göttingen, 1989), pp. 55-69, 132n; p. 68. Also see Zygmunt Bauman, *Moderne und Ambivalenz. Das Ende der Eindeutigkeit* (Hamburg, 1992), esp. pp. 45, 55, 69, 320-326, 343; Zygmunt Bauman, *Unbehagen in der Postmoderne* (Hamburg, 1999), esp. pp. 18, 27.

¹⁵ Dieter Langewiesche, “Fortschritt als sozialistische Hoffnung,” Klaus Schönhoven, Dietrich Staritz (eds.), *Sozialismus und Kommunismus im Wandel. Hermann Weber zum 65. Geburtstag* (Cologne, 1993), pp. 39-55.

¹⁶ Cf. Ingeborg Tömmel, *Der Gegensatz von Stadt und Land im realen Sozialismus. Reproduktion kapitalistisch geprägter Industriestrukturen durch Planwirtschaft in der DDR* (Kassel, 1980), pp. 30-118.

¹⁷ Cf. Andreas Dix, “Freies Land”. *Siedlungsplanung im ländlichen Raum der SBZ und frühen DDR 1945-1955* (Cologne, 2002).

¹⁸ Klaus Gestwa, “Technik als Kultur der Zukunft. Der Kult um die ‘Stalinschen Großbauten des Kommunismus’,” *Geschichte und Gesellschaft* 30 (2004), pp. 37-73; pp. 43-45.

supply a prominent goal of GDR policy. The contrast between socialist central planning in the East and the market economy in the West was an important dimension of the inter-German rivalry, and securing a food supply of good quality was a way to buy loyalty to the political system in both countries, especially during the 1960s.¹⁹

It is only in the last few years that the transformation of agricultural structures after 1945 has received significant popular attention. Most prominently, a number of recent food scandals – as, for example, the controversy over grain tainted with the poisonous chemical Nitrofen in the summer of 2002 – provided powerful demonstrations of the hazards of industrial agriculture for consumers and the natural environment. The widespread notion of independent, tradition-oriented peasants in the quiet, secluded countryside had always been something of a cliché, but with the post-war transformation of agriculture, it became almost completely obsolete.²⁰

In the immediate post-war years, the issue of food scarcity dominated agricultural policy in both German states. A collective experience that evoked memories of the food scarcity of the First World War and its aftermath²¹, hunger had to be fought and vanquished, and a reliably supply of food secured.²² The post-war “rationed society”²³ with its unequal access to farming products gave birth to sharp social conflicts, and the antagonism between food producers and consumers reflected a sharp clash between city and country.²⁴ Aside from

¹⁹ Cf. Winfried Halder, *Deutsche Teilung. Vorgeschichte und Anfangsjahre der doppelten Staatsgründung* (Zürich, 2002), pp. 139-160; Dierk Hoffmann, *Die DDR unter Ulbricht. Gewaltsame Neuordnung und gescheiterte Modernisierung* (Zürich, 2003), pp. 157-174, 196-200.

²⁰ Cf. Heinz Haushofer, “Die Idealvorstellung vom deutschen Bauern,” *Zeitschrift für Agrargeschichte und Agrarsoziologie* 26 (1978), pp. 147-160; Joachim Ziche, “Historische Relikte in der Vorstellungswelt der bäuerlichen Bevölkerung,” *Zeitschrift für Agrargeschichte und Agrarsoziologie* 19 (1970), pp. 221-229.

²¹ Robert G. Moeller, “Dimension of Social Conflict in the Great War: The View from the German Countryside,” *Central European History* 14 (1981), pp. 142-168; Robert G. Moeller, *German Peasants and Agrarian Politics, 1914-1924. The Rhineland and Westphalia* (Chapel Hill, 1986), pp. 43-159, 208-239; Robert G. Moeller, “Economic Dimension of Peasant Protest in the Transition from Kaiserreich to Weimar,” Moeller (ed.), *Peasants and Lords in Modern Germany. Recent Studies in Agricultural History* (London, 1986), pp. 140-167; pp. 152-155, 161; Jonathan Osmond, “Peasant Farming in South and West Germany during War and Inflation 1914 to 1924: Stability or Stagnation?” Gerald D. Feldman et al (eds.), *Die deutsche Inflation. Eine Zwischenbilanz* (Berlin, 1982), pp. 289-307; pp. 290-294, 305.

²² Günter J. Trittel, *Hunger und Politik. Die Ernährungskrise in der Bizone (1945-1949)* (Frankfurt, 1990); Günter J. Trittel, “Die westlichen Besatzungsmächte und der Kampf gegen den Mangel 1945-1949,” *Aus Politik und Zeitgeschichte* B 22 (May 31, 1986), pp. 18-29.

²³ Rainer Gries, *Die Rationen-Gesellschaft. Versorgungskampf und Vergleichsmentalität: Leipzig, München und Köln nach dem Kriege* (Münster, 1991).

²⁴ Paul Erker, “Hunger und sozialer Konflikt in der Nachkriegszeit,” Manfred Gailus, Heinrich Volkmann (eds.), *Der Kampf um das tägliche Brot. Nahrungsmangel, Versorgungs-*

food support from the Allied powers, it was only a quick and significant increase of agricultural production that could mitigate this critical situation. Therefore, both parts of Germany adhered to the production principle after the Second World War, the traditional pillar of German agricultural policy.²⁵ In fact, the cold war gave birth to a race for the abolition of rationing and a better food supply between the Federal Republic and the GDR; and that, again, required an increase in agricultural production. With the long-term trend of migration from country to city being interrupted only briefly during the early post-war years, a significant growth of both per-acre and per-worker productivity was the order of the day. With that, the trend towards large, rationalized production was set.²⁶ To be sure, the paths towards industrialized agriculture differed significantly in both German states as a result of divergent political and economic conditions. Specifically, there was no West German equivalent to the GDR's agricultural giantism. Finally, agriculture remained stronger in the GDR than in the Federal Republic if we look at prominent indicators like the percentage of agricultural workers in the total workforce. However, the general trend in the transformation of agriculture and rural society was remarkably similar in both countries. Rationalization of work routines, against the background of an intensified and mechanized production, led to a significant increase of productivity, even though this took place less rapidly and comprehensively in the GDR. At the same time, farmers left a steadily decreasing imprint on social structures and social relations in the villages.²⁷

politik und Protest 1770-1990 (Opladen, 1994), pp. 392-408; Günter J. Trittel, "Hungerkrise und kollektiver Protest in Westdeutschland (1945-1949)", Gailus, Volkmann, *Kampf*, pp. 377-391; Gustavo Corni, "Markt, Politik und Staat in der Landwirtschaft. Ein Vergleich zwischen Deutschland und Italien im 20. Jahrhundert," *Zeitschrift für Agrargeschichte und Agrarsoziologie* 51 (2003), pp. 62-77; p. 70.

²⁵ Karl Eckart, *Agrargeographie Deutschlands. Agrarraum und Agrarwirtschaft Deutschlands im 20. Jahrhundert* (Gotha, 1998), pp. 174-179.

²⁶ Werner Plumpe, "Wirtschaftsstruktur und Strukturwandel: Landwirtschaft," Gerold Ambrosius, Dietmar Petzina, Werner Plumpe (eds.), *Moderne Wirtschaftsgeschichte. Eine Einführung für Historiker und Ökonomen* (Munich, 1996), pp. 193-215; p. 203; Friedrich-Wilhelm Henning, *Landwirtschaft und ländliche Gesellschaft in Deutschland. Vol. 2. 1750 bis 1976* (Paderborn, 1978), pp. 229-232, 249-251, 254-262.

²⁷ Arnd Bauerkämper, "Agrarwirtschaft und ländliche Gesellschaft in der Bundesrepublik Deutschland und DDR," *Aus Politik und Zeitgeschichte* B 38 (September 12, 1997), pp. 25-37; pp. 29-34. For a more general perspective, see Bernd Faulenbach, "'Modernisierung' in der Bundesrepublik und in der DDR während der 60er Jahre," *Zeitgeschichte* 25 (1998), pp. 282-294, esp. p. 291.

3. The Collectivization of Agriculture in the GDR and Structural Change in West German Agriculture until the Early 1960s

In both German states, agricultural modernization was characterized by a technocratic voluntarism, a penchant for technology, and a high regard for the state as an agent of change. In the GDR, this situation was amplified by the illusion that central planning could direct economic and social transformation and in the process create a completely new, “socialist” society. Far-reaching misconceptions of their own powers were part of this exaggerated vision of modernization, and so was the notion that the preconditions of agricultural production, including nature, could be changed almost deliberately in accordance with the needs of industrialized farming. In both German states, conventional wisdom had it that modernization was basically synonymous with an uninterrupted, uniform progress towards industrial society. However, in the case of the GDR, Soviet influences played an important role that fostered a careless use of the soil, with the campaign for corn production in the 1950s providing a fitting example.²⁸

In the 1950s, agricultural modernization meant a whole set of parallel transformations in production in both countries. *First*, the intensity of production increased enormously, due primarily to the growing use of pesticides and mineral fertilizers. As a result, per-acre and per-worker productivity grew considerably; however, the farmers also lost their traditional bond with the soil in the process. *Second*, agricultural production became capital-intensive, especially in the Federal Republic. Generally, increasing investments of capital and energy took the place of human labor in agricultural production. *Third*, mechanization fundamentally changed work routines on the farm and likewise led to a massive increase of productivity. In the Federal Republic, the number of tractors doubled annually between 1950 and 1960. In the GDR, mechanization largely proceeded at a slower path than in the West, but the general trend was remarkably similar. *Fourth*, concentration of production within large units led to a fundamentally new structure of agricultural production, though this concentration did not take places as abruptly in the Federal Republic as in the GDR. However, the change in employment patterns was more radical in the Federal Republic, where many full-time farmers chose to transform their businesses into part-time enterprises in the wake of the growing disparity of income. *Fifth*, specialization of agricultural production started in the 1950s, at first without completely disrupting the natural circle of animal and plant production. A total

²⁸ Joachim Radkau, “Revoltierten die Produktivkräfte gegen den real existierenden Sozialismus?”, 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts* 4 (1990), pp. 13-42; p. 18; Joachim Radkau, *Natur und Macht. Eine Weltgeschichte der Umwelt* (Munich, 2000), p. 288.

separation of these branches of production did not emerge until the 1960s and 1970s, with this process taking place more comprehensively in the GDR than in the Federal Republic, where it was mostly confined to livestock breeding.²⁹

It is important to consider the consequences of agricultural modernization from at least two perspectives. To consumers, the transformation of agricultural production appeared as an overwhelming success story at first glance. In both German states, a secure supply of food contrasted nicely with hunger and starvation in the immediate post-war years. However, the hazards of an agricultural modernization driven almost exclusively by economic criteria became clear in the Federal Republic when discussions started over the ecological consequences of intensive agricultural production in the late 1970s. Similar problems of industrialized agricultural production emerged in the GDR, but those concerned about them could not discuss them publicly.³⁰

West German farmers were under enormous pressure in the 1950s to react to the government's changing needs and priorities. To be sure, the farm lobby was still strong enough to ensure state regulation that protected agricultural production to some extent from the vagaries of the world economy. However, it lacked effective means to stop the transformation of agricultural structures, and the general subordination of agricultural interests under those of industrial society in general.³¹ With that, the "end of the German farmers question"³² was approaching.

While the "farm deaths" (*Höfesterben*) were accumulating in the Federal Republic, collectivization robbed farmers of control over their property in the GDR. West German farmers likewise experienced a profound loss of status as their freedom to adjust production and work to their liking was shrinking rapidly. Separation from their means of production grew incessantly as farmers gradually became "specialist workers in public service."³³ In the GDR, agricultural policy degraded farmers to dependent workers in the Agricultural Produc-

²⁹ Arnd Bauerkämper, "Landwirtschaft und ländliche Gesellschaft in der Bundesrepublik in den 50er Jahren," Axel Schildt, Arnold Sywottek (eds.), *Modernisierung im Wiederaufbau. Die westdeutsche Gesellschaft der 50er Jahre* (Bonn, 1993), pp. 188-200; Bauerkämper, "Agrarwirtschaft". For more information, see Hans-Wilhelm Windthorst, "Die sozial-geographische Analyse raum-zeitlicher Diffusionsprozesse auf der Basis der Adoptorkategorien von Innovationen. Die Ausbreitung der Käfighaltung von Hühnern in Süddoldenburg," *Zeitschrift für Agrargeschichte und Agrarsoziologie* 27 (1979), pp. 244-266; Jörn Sieglerschmidt, "Die Industrialisierung der landwirtschaftlichen Produktion seit 1950," Sieglerschmidt (ed.), *Der Aufbruch ins Schlaraffenland. Stellen die Fünfziger Jahre eine Epochenschwelle im Mensch-Umwelt-Verhältnis dar?* (Environmental History Newsletter no. 2, Mannheim, 1995), pp. 181-203; Radkau, *Natur*, p. 289.

³⁰ Ulrich Kluge, *Ökowende. Agrarpolitik zwischen Reform und Rinderwahnsinn* (Berlin, 2001); Mooser, "Wir sind so hungrig"; Pyta, "Bauern".

³¹ Cf. Kluge, *Vierzig Jahre*, pp. 144-153, 185-218, 325-368.

³² Gesine Gerhard, "Das Ende der deutschen Bauernfrage – Ländliche Gesellschaft im Umbruch," Münkler, *Abschied*, pp. 124-142.

³³ Mooser, "Verschwinden", p. 30.

tion Collectives (*Landwirtschaftliche Produktionsgenossenschaften* [LPG]). In both states, agricultural policy was no longer directed towards the producers but rather towards the consumers of agricultural products. In the GDR, the use of pesticides and fertilizers did not increase as rapidly as in the Federal Republic in the 1950s. As a result, it was not until 1956/57 that the use of chemicals was again reaching the pre-war level of 1938/39.³⁴ Nevertheless, it was possible to improve the food supply and to suspend successively all rationing of food until 1958. However, East German agriculture remained generally isolated, while West Germany's export-oriented industry was a strong proponent of free trade during the 1950s. The renunciation of the production principle devaluated the farmers' work, and in the long run, farmers turned into "welfare recipients."³⁵ To a growing extent, they drew their income from donations from the general public, and no longer from the proceeds of their own work. Acting as "stewards of the land," they nowadays perform a "public service," or even an "office."³⁶

Following up on studies in agricultural sociology, more recent historiography stresses that farmers in both German states were not simply passive objects of agricultural policy and victims of modernization. Quite the contrary, it needs to be emphasized that farmers made creative use of agricultural policy and the economic conditions in rural society.³⁷ In the Federal Republic, they took an active role in the expansion of the industrial economy that was driving the economic boom. Farmers who abandoned agricultural production or turned to part-time production increased the industrial workforce while at the same time permitting the development of strong and productive farms through leasing or (less frequently) sale of land.³⁸ In general, West German farmers made clever use of rationalization and modernization and often managed to defend their own interests. However, one should not ignore in the wake of this general picture that reorientation towards non-farm labor was in most cases an economic necessity, and not a free choice.³⁹

³⁴ Eckart, *Agrargeographie*, p. 326.

³⁵ M. Rainer Lepsius, "Soziale Ungleichheit und Klassenstrukturen in der Bundesrepublik Deutschland," Hans-Ulrich Wehler (ed.), *Klassen in der europäischen Sozialgeschichte* (Göttingen, 1979), pp. 166-210; pp. 179n.

³⁶ Mooser, "Verschwinden", p. 24, 30, 32-4; Eva Barlösius, "Worüber forscht die deutsche Agrarsoziologie? Zum Verhältnis von Agrarsoziologie und Agrarpolitik," *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 47 (1995), pp. 319-338; pp. 329, 335. Similar Josef Mooser, "Agrargeschichte und Kulturgeschichte im 20. Jahrhundert," Paul Nolte et al (eds.), *Perspektiven der Gesellschaftsgeschichte* (Munich, 2000), pp. 124-133; pp. 127n.

³⁷ Rita Gudermann, "Neuere Forschungen zur Agrargeschichte," *Archiv für Sozialgeschichte* 41 (2001), pp. 432-449; pp. 433, 448.

³⁸ Hartwig Haubrich, "Agrarentwicklung in der Bundesrepublik Deutschland," *Geographische Rundschau* 39 (1987), issue 3, pp. 167-170; p. 167.

³⁹ Paul Erker, "Der lange Abschied vom Agrarland. Zur Sozialgeschichte der Bauern im Industrialisierungsprozeß," Frese, Prinz, *Politische Zäsuren*, pp. 327-360; pp. 331, 358-360; Mooser, "Agrargeschichte", p. 130; Daniela Münkel, "Einleitung: 'Der lange Ab-

In the GDR, members of the LPGs were likewise using the remaining room to maneuver. When political pressure increased notably in the late 1950s, farmers preferred to unite with other productive farmers to LPGs of type I, where the cultivation of land took place exclusively on a collective basis. LPGs of type I differed markedly from LPGs of type III, where land, machinery, buildings, and livestock all came under one comprehensive management; usually, these LPGs were formed by former farm workers or industrial workers, while LPGs of type I were popular among established farmers. After their forced integration into LPGs, formerly independent farmers often sought to preserve some remnants of a private economy. However, farm traditions, with the customary pattern of inheritance at their core, inevitably ended in the GDR in the 1960s. What was more, East German farmers, unlike their Western counterparts, were no longer the owners of their means of production, as command over land, livestock, and equipment was now in the hands of the LPG.⁴⁰

The transformation of agricultural production did not lead to a complete loss of the rural in either German state, as many farmers, while accepting jobs outside of agriculture, pursued farming on a part-time basis. Usually, they commuted, facilitated by the motorization of the Federal Republic since the 1950s. Many former farmers, acting as “worker-farmers (*Arbeiterbauern*)”, kept their place of residence in small rural communities.⁴¹ This was also possible in the GDR both for farmers who joined the LPGs and for those who sought jobs in other fields. They concentrated their energies on the remaining private land (with cultivation bringing significant proceeds in some cases), or turned to garden work. Rural bonds were particularly strong in the southern part of the GDR, where these traditions and smallholder structures stayed alive even in collectives. Social relations and associations preserved rural traditions even after collectivization.⁴²

schied vom Agrarland”, Munkel, *Abschied*, pp. 9-20; pp. 10n. From the perspective of the sociology of agriculture, see Burkard Lutz, “Die Bauern und die Industrialisierung. Ein Beitrag zur Erklärung von Diskontinuität der Entwicklung industriell-kapitalistischer Gesellschaften,” Johannes Berger (ed.), *Die Moderne – Kontinuitäten und Zäsuren* (Göttingen, 1986), pp. 119-137; pp. 123n; Hans Pongratz, “Bauern – am Rande der Gesellschaft? Eine theoretische und empirische Analyse zum gesellschaftlichen Bewußtsein von Bauern,” *Soziale Welt* 38 (1987), pp. 522-541; p. 530.

⁴⁰ Dagmar Langenhan, “Halte Dich fern von den Kommunisten, die wollen nicht arbeiten! Kollektivierung der Landwirtschaft und bäuerlicher Eigen-Sinn am Beispiel Niederlausitzer Dörfer (1952 bis Mitte der sechziger Jahre),” Thomas Lindenberger (ed.), *Herrschaft und Eigen-Sinn in der Diktatur. Studien zur Gesellschaftsgeschichte der DDR* (Cologne, 1999), pp. 119-165; pp. 121, 132, 136, 161. Also see Arnd Bauerkämper, “Kontinuität und Auflösung der bürgerlichen Rechtsordnung. Landwirtschaftliches Bodeneigentum in Ost- und Westdeutschland (1945-1990),” Hannes Siegrist, David Sugarman (eds.), *Eigentum im internationalen Vergleich (18. – 20. Jahrhundert)* (Göttingen, 1999), pp. 109-134.

⁴¹ Clemens Zimmermann, “Arbeiterbauern: Die Gleichzeitigkeit von Feld und Fabrik (1890-1960),” *Sowi. Sozialwissenschaftliche Informationen* 27 (1998), pp. 176-182; p. 177.

⁴² Barbara Schier, *Alltagsleben im “sozialistischen Dorf”. Merxleben und seine LPG im Spannungsfeld der SED-Agrarpolitik 1945-1990* (Münster, 2001), pp. 193-268; Barbara

However, West and East German agriculture differed not only in the structures and forms of property but also in the general pattern of agricultural work. Between 1950 and 1965, non-family labor on West German farms decreased by more than 60 percent. Wage labor gradually disappeared from the West German farm economy, which once again strengthened the family farm. As a result of the loss of non-family labor, farmers had to recruit family members to run operations. Women frequently preserved the farm tradition when men accepted jobs outside of agriculture.⁴³ This pattern differed markedly from that in the GDR, where LPGs still embraced a significantly larger workforce after the 1950s. In addition, collectives offered jobs not only in production but also in repair shops and social services, in contrast to West German production units. Until the final years of the GDR, there was a notable labor surplus on East German farms in comparison with the Federal Republic.

In general, family farm structures remained intact during the 1950s even in the face of rapid structural change. In contrast to the GDR, family farms were preserved as the institutional foundation of rural culture in West Germany until the 1960s.⁴⁴ However, in the following three decades, the family farm collapsed. The mechanization and capitalization of work processes, the persistent exodus from farming, and general transformations in society, such as the widening generation gap and changes in lifestyles, undermined the family farm. Nevertheless, it persisted as a model of West German agricultural policy, with its sharp demarcation from the collectivized agriculture in the East. In practice,

Schier, "Alltagsleben und Agrarpolitik im 'sozialistischen Dorf'. Eine Regionalstudie zum Wandel eines thüringischen Dorfes während der Jahre 1945-1990," *Aus Politik und Zeitgeschichte* B 38 (September 12, 1997), pp. 38-47; pp. 44n; Barbara Schier, "Die Rolle von Landwirtschaftlichen Produktionsgenossenschaften für Strukturwandel und Alltag in einem thüringischen Dorf vor und nach der 'Wende'," *Sozialwissenschaftliche Informationen* 27 (1998), pp. 190-198; pp. 194n. On changes in West Germany's occupational structure, see Bauerkämper, "Landwirtschaft", pp. 198n. On changes in traffic patterns, see Thomas Südbek, "Motorisierung, Verkehrsentwicklung und Verkehrspolitik in Westdeutschland in den 50er Jahren," Schildt, Sywottek, *Modernisierung*, pp. 170-187; p. 186.

⁴³ Eckart, *Agrargeographie*, pp. 256-260; Helene Albers, *Zwischen Hof, Haushalt und Familie. Bäuerinnen in Westfalen-Lippe (1920-1960)* (Paderborn, 2001), p. 439; Helene Albers, "Hin zur 'weiblichen Berufung'. Bäuerinnen in Westdeutschland," Gunilla-Friedrike Budde (ed.), *Frauen arbeiten. Weibliche Erwerbstätigkeit in Ost- und Westdeutschland nach 1945* (Göttingen, 1997), pp. 157-170; pp. 161, 165; Lieselotte Bieback-Diel et al, "Der soziale Wandel auf dem Lande: seine Bewältigung und Formen des Scheiterns," *Soziale Welt* 44 (1993), pp. 120-135; Karl Friedrich Bohler, Bruno Hildenbrand, "Kontinuitätssicherung in landwirtschaftlichen Betrieben. Problemlagen und Bewältigungsmuster," Gerd Vonderach (ed.), *Sozialforschung und ländliche Lebensweisen. Beiträge aus der neueren europäischen Landsoziologie* (Bamberg, 1990), pp. 70-91; pp. 77n, 90.

⁴⁴ Hans Pongratz, "Bäuerliche Tradition im sozialen Wandel," *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 43 (1991), pp. 235-246; p. 240. On the decline of farm workers, see Bauerkämper, "Landwirtschaft", p. 194; Mooser, "Verschwinden", p. 28.

however, the family farm, with its idealized vision of free peasants on their own property, was growing into a complete fiction.⁴⁵

4. “Socialist Modernity” and its Consequences for the Natural Environment. The Transition to Industrialized Agriculture since the 1960s

In the 1960s, the East German government sought to foster the industrialization of agriculture through the combination of farms into larger units. The following remarks intend to outline this process and then compare it briefly with the parallel, though dissimilar developments in the Federal Republic. At its Fifth Party Convention in July of 1958, the ruling SED decided “to exceed West German agriculture in per-acre yields of all cultures and in the production of meat, milk, and eggs during the third Five Year Plan [i.e., until 1963].” It was a culmination of the East German government’s utopias of modernization that combined economic growth with the creation of a harmonious “socialist community of people.”⁴⁶ During the following two decades, an almost unlimited confidence in science and technology (as evident in the programmatic talk of “industrial agricultural production”) went hand in hand with the unrestricted belief that man could alter nature to its pleasure.⁴⁷

At the Sixth Party Convention in January, 1963, East German leaders proclaimed that the state party’s key goals in agriculture were “the continued intensification and the gradual transition towards industrial methods of production.”⁴⁸ The decisions of the Seventh Party Convention in April 1967, as well as those of the Tenth Farmers’ Congress in June, 1968, intensified this policy even more; now, the rallying cries were the transition towards industrial methods of production and “socialist intensification” in agriculture.⁴⁹ After the

⁴⁵ Konrad Hagedorn, “Das Leitbild des bäuerlichen Familienbetriebes in der Agrarpolitik,” *Zeitschrift für Agrargeschichte und Agrarsoziologie* 40 (1992), pp. 53-86; Theodor Bergmann, “Der bäuerliche Familienbetrieb – Problematik und Entwicklungstendenzen,” *Zeitschrift für Agrargeschichte und Agrarsoziologie* 17 (1969), pp. 215-230.

⁴⁶ Protokoll der Verhandlungen des V. Parteitages der Sozialistischen Einheitspartei Deutschlands, 10. bis 16. Juli 1958, vol. 1 (Berlin [Ost], 1958), p. S. 70; also see Arnd Bauerkämper, *Ländliche Gesellschaft in der kommunistischen Diktatur. Zwangsmodernisierung und Tradition in Brandenburg 1945-1963* (Cologne, 2002), p. 183.

⁴⁷ Karl Hohmann, “Zielsetzungen des XI. Parteitages im Agrarsektor,” *FS-Analysen* 1986, issue 2, pp. 55-60; Karl Hohmann, “Agrarpolitik und Landwirtschaft in der DDR,” *Geographische Rundschau* 36 (1984), pp. 598-604; p. 600.

⁴⁸ Christian Krebs, *Der Weg zur industriemäßigen Organisation der Agrarproduktion in der DDR. Die Agrarpolitik der SED 1945-1960* (Bonn, 1989), p. 1.

⁴⁹ Hohmann, “Agrarpolitik und Landwirtschaft”, p. 600; Stefanie Schröder, “Die ideologische Arbeit der SED zur Entwicklung der Kooperation in der Landwirtschaft Mitte der sechziger Jahre,” *Beiträge zur Geschichte der Arbeiterbewegung* 22 (1980), p. 107.

original plans to create large LPGs had stalled in the early 1960s, the political goal was a new type of cooperative production units.⁵⁰ In the mid-1960s, LPGs won more autonomy of decision-making in the wake of the *Neues Ökonomisches System der Planung und Leitung* (NÖSPL), but towards the end of the decade, the government shifted once again with a new wave of state interventions.

The general aim of “socialist intensification” was an increase of agricultural production and of the productivity of both workers and land. The conservation of nature and the protection of the natural environment were clearly subordinate to this overarching goal. For example, the agricultural act of 1970 (*Landeskulturgesetz*) outlined the primacy of rational planning and the aim to use landscapes and nature.⁵¹ Moreover, the concept of agro-industrial production aimed at the creation of a uniform and homogeneous group of LPG farmers with interests and mentalities close to that of industrial workers, pursuant to the ideal of an egalitarian “socialist community of men.”⁵² In this way, the government sought to create equal living conditions in city and country – a goal that the SED did not abandon until November, 1981, when it announced to everybody’s surprise that “villages remain villages, and peasants remain peasants.”⁵³

The general trend towards vertical integration comprised four distinct processes. *First*, since the late 1960s, the East German government urged the creation of cooperatives that would provide for coordination between separate LPGs and a more balanced load for large machinery. Around 1970, large agricultural businesses called Cooperative Units Plant Production (*Kooperative Abteilungen Pflanzenproduktion* [KAP]) came into being. These included on average some 4,000 hectares of land as early as 1974, fourteen times the average size of an LPG in 1960. 1,200 KAPs gave work to more than 261,000 employees by 1974, cultivating 74 percent of the arable land in the GDR.⁵⁴ New inter-collective units also drove forward processes of integration and

⁵⁰ Jörg Roesler, *Zwischen Plan und Markt. Die Wirtschaftsreform in der DDR zwischen 1963 und 1970* (Freiburg, 1990), pp. 128, 141.

⁵¹ Hohmann, “Zielsetzungen”, p. 44. On the prehistory, see Nikola Knoth, “Blümeli pflücken und Störche zählen ...? – Der ‘andere’ deutsche Naturschutz: Wurzeln, Ideen und Träger des frühen DDR-Naturschutzes,” Frese, Prinz, *Politische Zäsuren*, pp. 439-463.

⁵² Plenty of evidence in Gerhard Grüneberg, *Agrarpolitik der Arbeiterklasse zum Wohle des Volkes. Ausgewählte Aufsätze 1957-1981* (Berlin [East], 1981), esp. pp. 43, 100, 105, 117, 149n, 164n, 176, 240, 243n, 270n, 308n, 323, 349, 352, 359, 433, 435.

⁵³ Rolf Stöckigt, “Die Bildung der Landwirtschaftlichen Produktionsgenossenschaften in der DDR – ein Springpunkt des Bündnisses der Arbeiterklasse mit der Bauernschaft,” Dieter Pellmann, Hans-Rainer Baum (eds.), *Aspekte der Geschichte der Agrarpolitik der SED* (n.l., n.d. [1988]), p. 32.

⁵⁴ Hans-Dieter Schulz, “Jetzt ackern meist die KAP-Riesen. Großer Sprung bei der Sozialisierung der Landwirtschaft,” *Deutschland Archiv* 7 (1974), pp. 929-935; p. 930; Roesler, *Plan*, p. 149n.

fusion in livestock breeding.⁵⁵ *Second*, the trend was to externalize preliminary work and services for agricultural production into newly formed inter-collective units. For example, centers for agro-chemistry (*Agrochemische Zentren*) took over responsibility for fertilizer and pesticide application, and repair work was concentrated in District Concerns for Agricultural Implements (*Kreisbetriebe für Landtechnik*). Likewise, melioration work was delegated to special businesses that each took care of several “People-Owned Estates” (*Volkseigene Güter* [VEG]), LPGs or KAPs. In plant production, these agrobusinesses cooperated with service centers on a daily basis.⁵⁶

Third, the East German government pushed towards vertical integration by linking agricultural enterprises with processing enterprises. Specifically, it forced the collectives to enter contracts with processing plants for a steadily increasing range of products. Therefore, institutionalized cooperative associations emerged by the late 1960s for quality meat, milk, grain, potatoes, fruits, and vegetables.⁵⁷ *Fourth*, officials ordered the creation of state-owned businesses outside the cooperative model since the late 1960s. Specifically, meat production took place more and more in plants of an industrial character, e.g. in Combines for Industrial Mast (*Kombinate für Industrielle Mast* [KIM]) for the production of pork and poultry.⁵⁸ In the GDR as in West Germany, the increasing production of poultry mirrored changes in lifestyles and patterns of consumption. However, the KIMs were also driving forces in the intensification and rationalization of egg production.⁵⁹

The so-called “Grüneberg-Plan” of 1977/78 (named after the Central Committee’s Secretary of Agriculture from 1960 to 1981, Gerhard Grüneberg) implied a forced separation of plant and animal production, and amplified once more the environmental hazards of agricultural production in East Germany. With the creation of specialized units for plant production and livestock breeding, the “Grüneberg-Plan” was the culmination of the giantism of East German

⁵⁵ Christel Nehrig, “Landwirtschaftspolitik,” Andreas Herbst, Gerd-Rüdiger Stephan, Jürgen Winkler (eds.), *Die SED. Geschichte – Organisation – Politik. Ein Handbuch* (Berlin, 1997), pp. 294-305; p. 301; Roesler, *Plan*, p. 151.

⁵⁶ Nehrig, “Landwirtschaftspolitik”, p. 303.

⁵⁷ *Ibid.*, p. 303; Roesler, *Plan*, p. 147n.

⁵⁸ Patrice G. Poutrus, *Die Erfindung des Goldbroilers. Über den Zusammenhang zwischen Herrschaftssicherung und Konsumententwicklung in der DDR* (Cologne, 2002), pp. 81-89, 182-190; Patrice G. Poutrus, “... mit Politik kann ich keine Hühner aufziehen.’ Das Kombinat Industrielle Mast und die Lebenserinnerungen der Frau Knut,” Lindenberg, *Herrschaft*, pp. 235-265; Patrice G. Poutrus, “Industrielle Produktion auf dem Lande? Das Beispiel KIM,” Renate Hürtgen, Thomas Reichel (eds.), *Der Schein der Stabilität. DDR-Betriebsalltag in der Ära Honecker* (Berlin, 2001), pp. 275-293; Karla Harnisch, “Die Politik der SED zur Entwicklung der Landwirtschaft der DDR 1966 bis 1968,” *Beiträge zur Geschichte der Arbeiterbewegung* 26 (1984), pp. 356-364; pp. 363n; Schulz, “Jetzt ackern”, p. 930.

⁵⁹ Andreas Kurjo, “Organisation und Bedeutung der Geflügelhaltung in der Landwirtschaft der DDR,” *FS-Analysen* 1989, issue 4, pp. 3-56; pp. 19n, 35, 46-48.

agricultural policy, and it should be noted that the plan met with resistance among many subordinate functionaries. In 1983, LPGs and VEGs specializing in plant production were cultivating 4,700 and 5,200 hectares of arable land, respectively, while LPGs and VEGs specializing in animal production were housing 1,500 and 2,200 large animals (*Großvieheinheiten*) on average.⁶⁰ Single fields comprised 200 hectares where the terrain was flat and fertile, and in some cases, fields were even double that size.⁶¹ As a result of persistent concentration, there were only 1,162 LPGs and 78 VEGs left in the GDR in 1989. With an average land of 4,500 to 5,000 hectares, they could comprise up to five villages.⁶²

It was not until the 1980s that the productive disadvantages of East German agricultural policy became clear. A megalomaniac policy had led to oversized units with little identification among the employees who had only first-hand knowledge in one branch of agriculture. The results were huge losses, most prominently in livestock production. Excessive specialization in the form of the separation of plant and animal production interrupted the natural nutrition cycles: while feed was lacking in livestock production, plant production had to buy mineral fertilizer to increase their yields. Cooperation between both sectors remained deficient, manure was distributed only partially and with significant losses, while plant production units were hoarding animal feed. In addition, the creation of large production units had entailed high investments, and huge transaction costs outweighed the economies of scale. Specifically, administration and supervision turned out to be costly, as did the long distances on the LPGs. Finally, specialization drove up costs in the form of services that the LPGs had to pay for.

After reunification, it quickly became clear that the GDR's agro-industrial complexes had by no means an *optimal size* in economic terms.⁶³ All in all, per-

⁶⁰ Ilona Buchsteiner, "Bodenreform und Agrarwirtschaft der DDR. Forschungsstudie," *Leben in der DDR, Leben nach 1989 – Aufarbeitung und Versöhnung. Zur Arbeit der Enquete-Kommission*. hg. vom Landtag Mecklenburg-Vorpommern, vol. 5 (Schwerin, 1997), pp. 9-61; p. 54; Kuntsche, "Umgestaltung", pp. 205-208; Weber, "Umgestaltung", pp. 2871n; Klaus Dreesen, *Die Bedeutung der Landwirtschaftlichen Produktionsgenossenschaften für die DDR* (Tübingen, 1973), pp. 323-386.

⁶¹ Hans-Jürgen Philipp, "Abfolge und Bewertung von Agrarlandschaftswandlungen in Ostdeutschland seit 1945," *Berichte über Landwirtschaft* 75 (1997), pp. 89-122; p. 98; Karl Hohmann, "Die Industrialisierung der Landwirtschaft und ihre Auswirkungen auf die Umwelt in der DDR," Maria Haendcke-Hoppe, K. Merkel (eds.), *Umweltschutz in beiden Teilen Deutschlands* (Berlin, 1986), pp. 41-67; pp. 45n.

⁶² Nehrig, "Landwirtschaftspolitik", p. 303.

⁶³ Konrad Hagedorn, "Konzeptionelle Überlegungen zur Transformation der Landwirtschaft in den neuen Bundesländern," Stephan Merl, Eberhard Schinke (eds.), *Agrarwirtschaft und Agrarpolitik in der ehemaligen DDR im Umbruch* (Berlin, 1991), pp. 19-34; p. 23; Adolf Weber, "Lohnt sich der Aufbau landwirtschaftlicher Großbetriebe in der DDR?" Hans Immler, Konrad Merkel (eds.), *DDR-Landwirtschaft in der Diskussion* (Cologne, 1972), pp. 105-121; Adolf Weber, "Der landwirtschaftliche Großbetrieb mit vielen Arbeitskräften

acre yields lagged behind West German standards since the 1950s, most prominently in the case of sugar beets. Likewise, results in animal production (meat per cattle or pig, milk production per cow) were significantly lower than those in the Federal Republic. At the same time, the GDR's agrobusinesses employed a much larger workforce than the small and medium-sized family farms in West Germany.⁶⁴

Agro-industrial production in large units led to severe environmental problems. However, investigations of these hazards never became public in the GDR, and remained an internal affair. In 1978, results of studies conducted by the government's department of the environment and an institute for water-related issues (*Institut für Wasserwirtschaft*) instigated a discussion in the Politburo, resulting in some limited measures for the protection of the environment. Most prominently, the government sought to shield those areas from pollution that served as reservoirs for drinking water.⁶⁵ In the 1980s, studies of the East German Academy of Agricultural Science uncovered significant environmental damage resulting from industrialized agricultural production. *First*, concentrated animal production had led to severe pollution of rivers and groundwater. Huge quantities of liquid manure were often deposited in highly concentrated form on small stretches of land. Even more, storage capacity for liquid manure was exceedingly small up to the early 1980s, with the result that there was no opportunity to take the condition of the soil or the time of the year into consideration when bringing it out. With nitrates ending up in the groundwater, the results were an eutrophication of lakes and rivers and, in many cases, a degradation of the quality of drinking water. The nitrate concentration in drinking water increased fivefold from the early 1960s to the early 1980s.⁶⁶ *Second*, pesticides and fertilizers were often applied by planes, which amplified the environmental impact. Even the highly poisonous DDT was spread over a wide area in this way. Agricultural planes were notoriously imprecise in the deposition of their loads, with the result that neighboring areas were likewise affected. In the Federal Republic, the use of mineral fertilizer and pesticides also took its toll on the environment, but here, civic protest and regulation led

in historischer und international vergleichender Sicht," *Berichte über Landwirtschaft* 52 (1974), pp. 57-80.

⁶⁴ Carlo Jordan, "Umweltzerstörung und Umweltpolitik in der DDR," Materialien der Enquete-Kommission "Aufarbeitung von Geschichte und Folgen der SED-Diktatur in Deutschland" (12. Wahlperiode des Deutschen Bundestages). hg. vom Deutschen Bundestag. Vol. II/3: Machtstrukturen und Entscheidungsmechanismen im SED-Staat und die Frage der Verantwortung (Frankfurt, 1995), pp. 1770-1790; p. 1783; Hohmann, "Agrarpolitik und Landwirtschaft", pp. 602n.

⁶⁵ Hans Reichelt, "Die Landwirtschaft in der ehemaligen DDR. Probleme, Erkenntnisse, Entwicklungen," *Berichte über Landwirtschaft* 70 (1992), pp. 117-136; p. 129.

⁶⁶ Michael Beileites, "'Eine Riesen-Schweinerei'. Die sozialistische Landwirtschaft aus Sicht der kirchlichen Umweltbewegung in der DDR," *Horch und Guck* 12 (2003), issue 41, pp. 28-34; Bernd Spindler, "Ökologische Probleme der industriemäßigen Agrarproduktion der DDR," *FS-Analysen* 1986, issue 2, pp. 57-60; Jordan, "Umweltzerstörung", pp. 1783n.

to a decrease in the use of such chemicals since the 1960s.⁶⁷ *Third*, erosion turned out to be a severe problem on large fields, with losses being taxed at 60 to 80 million Marks by the end of the 1950s. Special plantings could reduce the strength of the wind but only served to limit the damage without fully preventing it.⁶⁸ *Fourth*, the use of large machines caused a compression of the soil, in some cases to an extreme extent.⁶⁹

The East German government revised its program of industrialized agriculture to some extent after Grüneberg's death on April 19, 1981, the Tenth Party Convention in April, 1981, and the Twelfth GDR Farmers' Congress in May, 1982.⁷⁰ The size of production units was reduced, if only marginally. Functionaries also sought to strengthen the producers' links with the soil and revised the organization of work on LPGs accordingly with a reintroduction of the principle of territoriality (*Territorialprinzip*). Brigades were no longer in charge of special production units but rather of a certain limited area, preferably close to the workers' place of residence.⁷¹ Also, a new LPG act of 1982 allowed members of these collectives more room for individual farming on separate lots, a step that was augmented by the Eleventh Party Convention in April, 1986.⁷² Even more, the Politburo decided on October 18, 1983, to move plant and animal production closer to each other again by installing cooperative councils (*Kooperationsräte*).⁷³ In the following year, a price reform sought to increase agricultural production. Rising prices favored the producers but also increased state subsidies, since the government sought to keep consumer prices for basic foodstuffs low. With that, subsidies for food increased from 12 to 30.8 billion Marks between 1983 and 1986; the price of bread remained so low that it was sometimes used as animal feed.⁷⁴

⁶⁷ Jordan, "Umweltzerstörung", p. 1782.

⁶⁸ Spindler, "Ökologische Probleme", p. 67; Jordan, "Umweltzerstörung", p. 1782; Beleites, "Riesen-Schweinerei", p. 28.

⁶⁹ Spindler, "Ökologische Probleme", p. 65; Beleites, "Riesen-Schweinerei", p. 28; Reichelt, "Landwirtschaft", p. 128.

⁷⁰ Christine Zarend, "Möglichkeiten und Grenzen der Agrarpolitik in der DDR Anfang der achtziger Jahre," *Beiträge zur Geschichte der Arbeiterbewegung* 32 (1990), pp. 528-531; Karl Hohmann, "Vom Optimismus zum Realismus – die agrarpolitische Zielsetzung der SED," *FS-Analysen* 1981, issue 3, pp. 49-55; pp. 54n.

⁷¹ Karl Eckart, "Veränderungen in der Landwirtschaft der DDR seit Anfang der siebziger Jahre," *Deutschland Archiv* 18 (1985), pp. 396-411; p. 405; Hans Dieter Schulz, "Plant die SED noch größere Agrar-Einheiten? Schon vor dem Bauernparteitag und -kongreß waren die Weichen gestellt," *Deutschland Archiv* 15 (1982), pp. 713; Karl Hohmann, "Die Agrarpolitik der SED zwischen gesellschaftlichem Anspruch und wirtschaftlichen Notwendigkeiten," *FS-Analysen* 1982, issue 8, pp. 67-91; p. 76.

⁷² Hohmann, "Zielsetzungen"; Eckart, "Veränderungen", p. 407.

⁷³ Schulz, "Plant die SED"; Hohmann, "Agrarpolitik der SED", p. 75.

⁷⁴ Adolf Weber, "Stand und Entwicklung der DDR-Agrarproduktion," *FS-Analysen* 1989, issue 5, pp. 26-38; pp. 26, 34; Andreas Kurjo, "Zur Entwicklung der Land- und Ernährungswirtschaft der DDR," *FS-Analysen* 1986, issue 4, pp. 75-108; pp. 89n, 108; Andreas

The government also sought to strengthen the Farmers' Mutual Aid Society (*Vereinigung der gegenseitigen Bauernhilfe*) which went back to 1946/47 and now regained important social policy functions.⁷⁵ In doing so, the SED leadership also rescinded its overall goal of creating equal living conditions in city and country. From now on, the official line was to emphasize the peculiarities of rural life and the intrinsic values of living in the countryside. For example, Kurt Krambach, a leading expert on the sociology of agriculture in the GDR, argued for

a recreation of rural traditions, experiences, and customs like the legendary industriousness of the peasants, the close bonds with animals and the soil, their economizing and their careful use of common property as important components of the productive skills and socialist behavior and way of thinking of peasants in a collective.⁷⁶

With demands for "making the village a home for peasants in a collective" and the mobilization of the "progressive historical traditions of rural life in villages," the SED agricultural policy effectively abandoned its one-sided orientation towards models of industrialization and urbanization. In the 1980s, the government even arranged for the reconstruction of old farm houses in order to strengthen local identities. In doing so, the leading functionaries tacitly acknowledged the failure of their agricultural and social policy.⁷⁷

As it turned out, evoking "good peasant experiences and traditions" for the productive good of large-scale agricultural production did not stop the general decline of farming in the GDR.⁷⁸ The trade deficit necessitated the sale of agricultural machinery made in the GDR. As a result, usage circles of machinery in East German agriculture grew longer and longer. In spite of careful corrections, the SED's agricultural policy drew a contradictory picture during the 1980s. For example, "progress of science and technology" remained an important ideal that was rescinded only partially.⁷⁹ Also, the dominance of large enterprises in the GDR remained generally unchanged. In 1989, 3,800 LPGs and 465 VEGs were cultivating 87 and 7 percent, respectively, of the GDR's total arable land. Collective and state farms for plant production (LPG[P] and VEG [P] in the GDR's system of acronyms) held 4,500 hectares of land on average,

Kurjo, "Agrarpolitik und Agrarwirtschaft in der DDR im Prozeß der Erneuerung an der Schwelle der 90er Jahre," *FS-Analysen* 1990, issue 2, pp. 139-155; pp. 141, 149, 151.

⁷⁵ Peter Joachim Lapp, "VdgB neues Mitglied im Demokratischen Block," *Deutschland Archiv* 19 (1986), pp. 16n.

⁷⁶ Kurt Krambach, "Genossenschaftsbauern und Dorf im Prozeß der sozialistischen Intensivierung," *Deutsche Zeitschrift für Philosophie* 33 (1985), pp. 42-52; p. 43.

⁷⁷ Siegfried Burkhart, "Unser sozialistisches Dorf," *Einheit* 1987, issue 4, p. 321; Krambach, "Genossenschaftsbauern", p. 50.

⁷⁸ *Ibid.*, p. 46.

⁷⁹ Gerhard Ambros, "Über die umfassende Intensivierung der landwirtschaftlichen Produktion," *Einheit* 1986, issue 2, pp. 145-147; Gerald Schmidt, "Über die umfassende Intensivierung der landwirtschaftlichen Produktion," *Einheit* 1987, issue 1, pp. 82-85.

and LPGs for animal production (LPG[T]) comprised some 1,800 large animals (*Großvieheinheiten*) each.⁸⁰ In 1990, the GDR's largest farm for pig mast closed its doors in Mecklenburg: it had offered space for more than 100,000 animals.⁸¹

In the 1980s, the government finally took steps to reduce the environmental consequences of industrialized farm production. For example, it planted rows of trees in order to reduce wind erosion on large fields. Mineral fertilizer use decreased, and the construction of storage tanks for liquid manure reduced the pollution of the groundwater. Also, the increasing use of special machinery for loosening the lower strata of the soil reduced the compression hazards.⁸² However, the overall environmental impact remained high, and in fact led to the formation of opposition groups. Protest erupted with the collapse of the SED's regime in the fall of 1989. For example, citizens in Thuringia revolted against a huge combine for pig production near Neustadt/Orla that comprised some 175,000 animals, most of them for export to the Federal Republic. The combine dumped its liquid manure in 16 open ponds located on the site of a former forest of a size of 130 hectares. During the 1980s, an environmental opposition group had formed in the nearby villages under the auspices of the church.⁸³

Generally speaking, the political goal of "industrial production methods" in East German agriculture led to important transformations of both agricultural production and rural society. However, the giantism of the SED's agricultural policy turned out to be economically dysfunctional. Even more, the transition towards industrial modes of production caused severe environmental problems that the government for the most part ignored up to the 1980s. At the same time, environmental opposition groups grew since the late 1970s but suffered from a limited range of action. A "Society for Nature and the Environment" (*Gesellschaft für Natur und Umwelt*) formed in 1980 upon the initiative of the SED leadership with the goal of binding friends of nature to the regime. However, independent seminars and local initiatives, like the nationwide study-group "alternatives within agriculture" (*Arbeitskreis „Alternativen in der Landwirtschaft“*) with the church-owned educational establishment *Kirchliches Forschungsheim Wittenberg*, took a strong stand against agro-industrial production in large-scale units. The Ministerium für Staatssicherheit was able to obstruct an experimental project of the study-group but could not prevent the formation of a league for organic farming (*Arbeitsgemeinschaft für Ökologischen Landbau „Gää“*) with an ecological study-group of the Dresden church district (*Ökologischer Arbeitskreis der Dresdner Kirchenbezirke*). In 1990, this group

⁸⁰ Buchsteiner, "Bodenreform", p. 55.

⁸¹ Karl Eckart, "Agrarpolitische Rahmenbedingungen und Ergebnisse des Agrarstrukturwandels in den neuen Bundesländern," *Deutschland Archiv* 27 (1994), pp. 926-939; p. 927; Reichelt, "Landwirtschaft", p. 130.

⁸² Hohmann, "Zielsetzungen", p. 66.

⁸³ Beileites, "Riesen-Schweinerei", p. 31.

gave birth to a formal association of the same name that still organizes organic farmers in the new states of unified Germany.⁸⁴

5. Industrialized Agriculture and the Natural Environment in the Federal Republic of Germany since the 1960s

In essence, the GDR's megalomaniac agricultural policy was a radical version of a general trend that occurred, in different degrees, in all industrial societies after the Second World War. The following remarks sketch the move towards industrialized agriculture in the Federal Republic of Germany in order to identify general characteristics and the specifics of the GDR's agro-industrial complexes.

Up to the 1960s, the overarching goal of agricultural policy in West Germany was a secure supply of cheap food. However, the production principle gradually gave way to the goal of profitability since the mid-1950s. In spite of the EEC's protectionist farm policy, market forces, together with a rapid exodus of workers, pushed the farmers to increase per-acre yields and productivity by means of a rapid mechanization, intensification and rationalization of agricultural production. As a result, capital investments per workplace in agriculture exceeded industrial figures by the 1970s.⁸⁵ Political measures supported horizontal cooperation between farms in the form of collective machinery use and special subcontractors.⁸⁶ However, none of these measures fundamentally challenged the farm owners' freedom of decision and operation, in contrast to collectivization in the GDR.

As in the East German state, agriculture increasingly linked up with related branches and food processing in the Federal Republic, especially in animal production. In some cases, even commercial enterprises took the initiative to set up units for chicken or cattle mast or egg production, which lead to large, specialized agro-industrial complexes. The creation of these production units mirrored a general trend towards a separation of animal and plant production, most prominently in the northwestern part of Germany around the cities of Oldenburg, Cloppenburg, and Vechta. In the 1980s, measurements showed excessive loads of nitrogen in the soil, due mostly to large deposits of mineral fertilizer and liquid manure.⁸⁷ All in all, the general trend was towards larger stocks

⁸⁴ Michael Beleites, "Kirchliches Forschungsheim Wittenberg," Hans-Joachim Veen et al (eds.), *Lexikon Opposition und Widerstand in der SED-Diktatur* (Berlin, 2000), pp. 212-213; Beleites, "Riesen-Schweinerei", pp. 29-31.

⁸⁵ Joachim Radkau, *Technik in Deutschland. Vom 18. Jahrhundert bis zur Gegenwart* (Frankfurt, 1989), p. 317. Also see Klaus Herrmann, *Pflügen, Säen, Ernten. Landarbeit und Landtechnik in der Geschichte* (Reinbek, 1985), p. 239.

⁸⁶ Eckart, *Agrargeographie*, pp. 241n.

⁸⁷ *Ibid.*, pp. 294n; Windthorst, "Analyse".

of animals. For example, the average size of pig stocks on West German farms grew threefold between 1971 and 1988.⁸⁸ At the same time, the farmers' dependence on other branches grew considerably. Previously independent farmers became contract workers, with a salary depending on production and profit. A concentration on livestock breeding often went at the expense of the environment since many businesses lacked the necessary land for a proper deposition of the animals' manure. In addition to groundwater pollution, air pollution from mast units and chicken farms became a problem.

In plant production, vertical integration remained limited. In order to increase productivity, farmers used pesticides, herbicides and fungicides on fields of ever-growing size. The average deposit of nitrogen per hectare rose from 25.6 kilogram during the 1950/51 agricultural season to 79.7 kilogram in 1967/70, while the phosphorus deposit doubled during these two decades.⁸⁹ In the late 1960s, West German farmers spent some 400 million DM annually for 17,000 tons of pesticides.⁹⁰ The ensuing burden for the environment, especially in the form of erosion and eutrophication of surface waters, was significant but tended to decrease since the 1970s as a result of effective state supervision. Also, farmers were using pesticides and fertilizers more carefully now, resulting in reductions of total amounts.⁹¹ During the 1980s, a public debate arose in West Germany over the consequences of industrialized agriculture and the production of more healthy food.⁹² Organic farming grew significantly in the wake of these discussions, with 32 percent of the land cultivated in this manner by 1989/90 lying in Bavaria.⁹³

In comparative perspective, it becomes clear that the transformation of agriculture in the GDR was more radical and far-reaching than in the Federal Republic. In West Germany, the importance of agriculture shrunk considerably, but agricultural production did not lose its privileged role as a heavily subsidized part of the economy. However, more than a million farms ceased production between 1960 and 1990, in addition to a widespread move towards part-time farming. Many of those who gave up production remained proprietors of their arable land. Rent, not sale, of agricultural land was typical of the transformation of farming in the Federal Republic.⁹⁴ Finally, the transformation was

⁸⁸ Eckart, *Agrargeographie*, p. 288.

⁸⁹ *Ibid.*, p. 244.

⁹⁰ *Ibid.*, p. 248.

⁹¹ *Ibid.*, pp. 292-294.

⁹² Arnim Bechmann, *Landbau-Wende. Gesunde Landwirtschaft – Gesunde Ernährung. Vorschläge für eine neue Agrarpolitik* (Frankfurt, 1987).

⁹³ Eckart, *Agrargeographie*, p. 283.

⁹⁴ Haubrich, "Agrarentwicklung", p. 167; Eckart, *Agrargeographie*, pp. 252-254; Ulrich Kluge, "Deutsche Agrarpolitik im 20. Jahrhundert zwischen Protektionismus und wirtschaftlicher Modernisierung. Ausklang des Agrarischen?" Daniela Munkel (ed.), *Der lange Abschied vom Agrarland. Agrarpolitik, Landwirtschaft und ländliche Gesellschaft zwischen Weimar und Bonn* (Göttingen, 2000), pp. 289-314; pp. 306-309, 311-313.

cushioned through a comprehensive welfare policy. In contrast, the East German government forced the transformation of agriculture in several stages, and discussions over environmental issues remained muted in the GDR for lack of an unrestricted public sphere.

In all probability, West German agriculture will lose its privileged position in the foreseeable future. The agrobusiness complex is likely to grow, continuing the current trend towards efficient farms with high productive capacity, and biotechnological advances will presumably nourish this general development. Growing control efforts will be indispensable in order to curb the environmental impact of large agricultural production units. However, producers will face not only a public discussion of their environmental toll but also an increasing consumer demand for more healthy food.⁹⁵

6. Conclusion: Two Paths of Modernizing Agriculture and their Environmental Impact

As a result of collectivization in the GDR, the family farm persisted as the West German model of agricultural policy until the collapse of the SED's regime and the reunification of Germany, regardless of the structural changes within agriculture. In fact, the family farm even played a role in the debate of the transformation of East German agriculture after reunification.⁹⁶ However, this concept turned out to be elusive, not least because the East German model of forced modernization drew on structural and cultural traditions from the pre-war era. Though important trends of agricultural modernization were remarkably similar in both German states, the paths of development differed considerably.

In 1989, East German agriculture was far more labor-intensive than its Western counterpart. The general task of the LPGs was to secure a cheap food supply for the East German population. With that, the East German agricultural policy adhered to the production principle as opposed to the productivity principle. Due in part to mandatory social services within collectives, East German agricultural businesses comprised a much larger number of workers until 1989/90 than those in the Federal Republic. As late as 1985, 11 percent of the GDR's workforce was employed in the agricultural sector. In West Germany, the secular trend from the primary sector towards the industrial and service economy was significantly faster – truly a paradox in the light of the radical modernist ideals of the SED leadership.⁹⁷

⁹⁵ Cf. Kluge, *Ökowende*.

⁹⁶ Hagedorn, "Leitbild", pp. 75-77, 79n; Barlösius, "Worüber forscht?", p. 323.

⁹⁷ Bauerkämper, "Agrarwirtschaft", pp. 35n. Figures according to Kurjo, "Entwicklung", p. 77.

However, there were also qualitative differences between the developments of agriculture in the two German states. In the Federal Republic, farmers were operating under the pressure of market prices due to international competition. As a result, the principle of profitability took the place of the production principle since the 1950s. Also, West German agricultural policy never infringed the farmers' property rights. In contrast, East German farmers lost command over their property when they entered the LPGs. In spite of bitter disputes over the property of collectives and questions of restitution, it is noteworthy that the GDR's collectives developed bonds with their members that persisted even after the peaceful revolution of 1989/90.⁹⁸ However, generational change and lack of capital, land, and knowledge prevented a recreation of a peasant-based agriculture in East Germany after 1990.⁹⁹ As a result, the successors of the LPGs still claim a large part of East Germany's arable land.¹⁰⁰ In West Germany, "classic modernity" gave way to "reflexive modernity" in the late 1960s and early 1970s, with important consequences for agriculture as well.¹⁰¹ In contrast, East German leaders generally ignored the ambivalence of agricultural modernization. As in so many fields, the SED regime's ability to learn and correct previous mistakes turned out to be limited.¹⁰²

The environmental consequences of industrialized agricultural production became apparent in both German states in the 1970s. Conditions in the Federal Republic allowed open criticism of these problems, while the GDR sought to suppress public discussions on the environmental hazards of industrial agriculture. Protest and study-groups remained singular and isolated, usually under the protection of the protestant church. After the collapse of SED rule, these groups voiced an open critique of agro-industrial production, leading to the foundation

⁹⁸ Cf. Hanns C. Löhr, *Der Kampf um das Volkseigentum. Eine Studie zur Privatisierung der Landwirtschaft in den neuen Bundesländern durch die Treuhandanstalt (1990-1994)* (Berlin, 2002); Arnd Bauerkämper, "Der Kampf um den Boden in den neuen Bundesländern. Die Debatte über die Restitution des Bodenreformlandes und die Privatisierung der Agrarwirtschaft seit 1989/90," *Revue d'Allemagne* 31 (1999), issue 1, pp. 57-73.

⁹⁹ Thomas Meyer, Pavel Uttitz, "Nachholende Marginalisierung – oder der Wandel der agrarischen Sozialstruktur in der ehemaligen DDR. Ergebnisse der Befragung der Mitglieder einer Produktionsgenossenschaft," Rainer Geißler (ed.), *Sozialer Umbruch in Ostdeutschland* (Opladen, 1993), pp. 221-250; pp. 228-230.

¹⁰⁰ See figures in Eckart, "Agrarpolitische Rahmenbedingungen", pp. 933n; Hans Luft, "Entwicklung der ostdeutschen Landwirtschaft," *Deutschland Archiv* 29 (1996), pp. 422-428; pp. 426n; Hans Lutz, *Landwirtschaft Ost kontra Treuhandmodell* (Berlin, 1997), p. 97.

¹⁰¹ Cf. Gabriele Metzler, "Das Ende aller Krisen? Politisches Denken und Handeln in der Bundesrepublik der sechziger Jahre," *Historische Zeitschrift* 275 (2002), pp. 57-103; pp. 62, 102; Klaus Schönhoven, "Aufbruch in die sozialliberale Ära. Zur Bedeutung der 60er Jahre in der Geschichte der Bundesrepublik," *Geschichte und Gesellschaft* 25 (1999), pp. 123-145; p. 126.

¹⁰² Cf. M. Rainer Lepsius, "Die Institutionenordnung als Rahmenbedingung der Sozialgeschichte der DDR," Hartmut Kaelble, Jürgen Kocka, Hartmut Zwahr (eds.), *Sozialgeschichte der DDR* (Stuttgart, 1994), pp. 17-30; pp. 28n.

of the organic farming group *Anbauverbandes für Ökologischen Landbau „Gää.“*¹⁰³ In West Germany, the environmental movement likewise criticized the impact of industrialized agriculture on nature, though protest against nuclear power plants claimed the lion's share of attention in the 1980s. After reunification, modernist conceptions of agriculture are on the defensive in all of Germany. Having reached the end of ambitious illusions on the creative powers of man with regard to agriculture, it is now time to write their history.

¹⁰³ Beleites, "Riesen-Schweinerei", pp. 30-33.