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Nijhuis, Steffen

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SITE VISIT REPORT FEBRUARY/MARCH 2017

Steffen Nijhuis

TU Delft Delft University of Technology

Challenge the future

Dr Steffen Nijhuis
Delft University of Technology
Faculty of Architecture and the Built Environment
Julianalaan 134
2628 BL Delft
The Netherlands
s.nijhuis@tudelft.nl

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INTRODUCTION

This is a report on the visit of the Hachirogata polder of the author from 28 February 2017 to 2 March 2017. The land reclamation is located in the prefecture of Akita in Japan. The visit consisted of a field trip to the polder accompanied by Prof. Yasunori Kitao (Kyoto Women's University) with interviews with local people, a visit of the polder museum, a visit to the village Ogata-Mura and the Municipal Office and an interview with Mr. Miyata, who has been mayor for thirty years of the village.

BACKGROUNDS

The Hachirogata Lagoon was located about 40°N and 140°E. It had a surface area of 12 by 27 km with a circumference of 82 km. It was the second largest body of water in Japan. Its waters harboured seventy different species of fish (Ogata, 2016). After a feasibility study by Professor Ph. Jansen and Engineer A. Volker of the Delft University of Technology in the Netherlands in 1954, the World Bank and the UN Food and Agriculture Organization (FAO) supported the reclamation of the lagoon. The reclamation work was started in 1957 and lasted 20 years. In March 1977, at a cost of 85.2 billion dollars, the Hachirogata Lagoon had been converted into 17,203 hectares of fertile land: the Hachirogata polder (Figure 1).

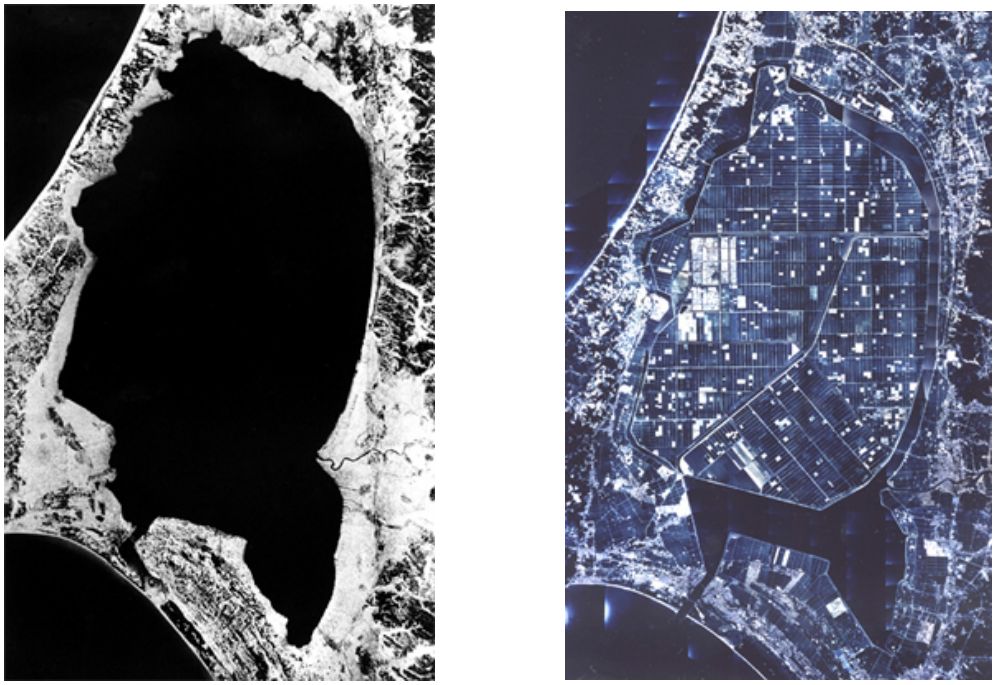

Figure 1: The Hachirogata Lagoon (left), and the Hachirogata polder (right)
(images: Hachirogata impoldering project office, 1969)

The land of the Hachirogata polder is about 4.5 metres below sea level. The water level is regulated by the tidal gate, the central drainage channel, and the northern and southern pumping stations. Each of the pumping stations has a capacity of 40 metric tons of water per second (Hachirogata impoldering project office, 1969; Nedeco, 1958).

Figure 2: A recent aerial photograph of the Hachirogata polder from the South (image: Ogata, 2016)

The first pioneers settled on the barely dry land as early as 1964, and after a nationwide campaign the name chosen for the new village was "Ogata-Mura" ("Big Lagoon") , the ancient name of the Hachirogata Lagoon. Applications came from all over Japan, but only the best farmers were selected (Ogata, 2016). The purpose of the reclamation project was "To establish an agricultural model for Japan by raising production and income levels through greater efficiency, and by building a prosperous, comfortable and modern farming community" (Hachirogata impoldering project office, 1969).

The Hachirogata polder was established to develop large-scale industrial agriculture with techniques of modern agriculture. Nowadays 540 full-time farmers manage 9,000 ha of land and primarily grow rice, but also beans, wheat, and vegetables. The layout of the polder (Figure 2) resembles the IJsselmeerpolders in the Netherlands, such as the Wieringermeerpolder (1927-1930), Noordoostpolder (1937-1942) and Oostelijk Flevoland (1950-1957), and served as inspiration for the design of the polder. In particular the Noordoostpolder was of interest since it was the first Dutch polder in which the layout was planned as an integral task, involving all its agricultural, urban and landscape elements at once, while reflecting the state of the art in design, science and engineering (Nijhuis, 2017). Also Oostelijk Flevoland was of great influence since it was under construction in the period

that the Hachirogata polder was planned. Ogata-Mura was conceived as a new farming village illustrating a new organization of communities (Kitao, 2016).

SUMMARY OF THE VISIT

28 February 2017: arrival in Akita.

1 March 2017: In the morning we drove to Mt. Kanpu, a relatively small mountain of 355 meters ASL located on the Oga Penninsula to the west of the polder. We visited one of the quarries where rock was excavated to serve as foundations for the dams, sluice complexes and dikes of the polder. Futhermore we saw the spring where water wells from the ground to serve as fresh water supply for the village and surrounding farmlands, and enjoyed the prospect from the mountain having an overview of the polder.

From there we went to the polder museum and got an introduction into the history of the impoldering by a local volunteer that happens to be a rice farmer in the polder as well. Next to that archival research was conducted to find historical documents on the planning and design of the polder, particularly related to the Dutch involvement (e.g. Nedeco) of the setup of the reclamation and the water infrastructures (pumps, sluices, etc.).

Figure 3: the polder museum and southern pumping station

From there we drove through the polder visiting particular sites, such as the southern pumping station, the southern dike and lake, rice factory with the biggest silos in Japan, the impressive blossom-tree lined central road, one of the two important crossings of the tree-lined main water discharge canal and Mt. Ogata Fuji that happens to be the lowest “mountain peak” in Japan (0 metres ASL). From there a dramatic view over the vast open agricultural landscape opened up, closely resembling the Dutch agricultural landscape of the IJsselmeerpolders. An important difference is however, that here the land is mainly used for rice production and vegetables. The rice produced is here is of an exceptional quality and is

praised throughout Japan and beyond. Also it is interesting to see that parts of the polder are transformed in nature reserve, and there is attention to alternative forms of energy production.

Figure 4: The open polder landscape

Also we visited a paddy field where the farmer explained how the water system functions in terms of water level management and use of the water courses, sluices, etc. Interesting detail is that water levels fluctuate constantly throughout the season in order to create optimal conditions for the rice to grow. In Dutch Polders the water levels are usually stabile throughout the season with relatively high water levels in the summer time and relatively low water levels in winter, to facilitate land use.

Figure 5: A paddy field and machinery for rice production

2 March 2017: In the morning we had a walk through the village of Ogata-Mura. Special features are the axial organization, wind breaks by mainly pine-trees, the spacious setup with suburban housing typologies and the shrine. This shrine is erected to honour the establishment of the polder and was an important socio-cultural feature that was important in the establishment of the community. Also interesting was the centre of the village with facilities like school, health-care centre, cooperation/market, and the municipal building with its typical tower marking the centre of the village. All buildings are modernistic in expressions, which gives the village a very western appearance. We went to the Municipal Office to collect some background documents. In the afternoon we had an extensive interview with Mr. Miyata, who has been mayor for thirty years of the village. In appendix A the questions can be found. Since Mr. Miyata could not speak English, the questions were translated and discussed by prof. Kitao. The results of the interview are now transcribed and translated into English. The result will provide important insights in the spatial, social-economic and ecological characteristics, challenges and identity of the Hachirogata polder and Ogata-Mura.

RECOMMENDATION

Since this is a valuable but initial first encounter with the Hachirogata polder and Ogata-Mura it is important to elaborate a more systematic analysis addressing spatial, socio-economic and ecological aspects at multiple scales. This could serve as a basis for a comparative analysis with the Dutch IJsselmeerpolders that aims to identify important characteristics, transnational influences (Japan-Netherlands), future challenges and principles and strategies for future development.

ACKNOWLEDGEMENT

I would like to thank the polder museum, Mr. Miyata, the local farmer, Prof. Kitao and Prof. Saito for this insightful study trip and wonderful experience.

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APPENDIX: QUESTIONS INTERVIEW MR. MIYATA

＜General＞	＜全体的な質問＞
１）What are the strenghts, oppertunities, weaknesses, threaths of the Hachirogata polder in your opinion?	１）八郎潟干拓地（総合中心地を含む）に関して、どのような点を高く評価しますか（生活環境や農業の観点から）、また、どのような弱点があると思いますか。
２）Do people feel happy to live here, and why?	２）八郎潟の人々はこの干拓地で生活をして、どのような喜びを感じていると思いますか？そして、どうしてそのように思っているのでしょうか？
３）Has the Hachirogata polder a particular identity?And if yes, how would you describe it?	３）八郎潟の干拓地の最も際立った、固有性（アイデンティティ？）はどのようなことで、それをどのように理解されていますか？
４）What are important socio-cultural values of the polder/village?	４）干拓地にある村の重要な社会・文化的な価値は、どのようなものであると考えておられますか。
５）Is living below the sea-level experienced as a problem by the people?	５）干拓地という、海面の下の土地での生活を、人々はどのように感じているとお考えでしょうか。
６）How do you understand the history of the village in last 50 years.	６）村ができて50年経ちましたが、この村の歴史をどのように考えますか？
Agriculture	＜農業について＞
７）What are the main crops grown for large scale agricultural production? (E.g. Vegetables, cereal, fruit)	７）大規模農業生産ではどのような農産物を生産しておられますか？野菜や、果物、米、トウモロコシなどもありますか。
８）How are logistics organized? (From land to market/factory?, is this centrally organized?)	８）生産物の流通はどのようになっていますか？生産物を市場や工場にどのようなシステムで出荷されていますか？
９）Is the polder only focussed on agricultural production (mono-functional), or is there also space for multifunctional use? (ecological development, recreation, etc)	９）干拓地は農業生産に特化していますか？他にどのような産業がありますか。そして、他の産業への展開の可能性はあると考えられますか？（例えば、エコロジーやレクリエーションなどその他）
１０）What kind of future socio-economic or climatic trends/developments do you recognize that will impact the setup of the polder?	１０）干拓地全体の環境について、気候環境の変動に対して、社会や経済はどのような影響が生じると考えておられますか？
１１）And what possibilities are there to anticipate and facilitate these developments?	１１）今後、干拓地が開発されるとすれば、どのような方向で、どのように開発されると考えられますか？
１２）Are the farms/houses/land family property? How is follow up organized? (From father to son/daughter? And is that possible, related to demographic trends such as agening etc)	１２）農場、宅地は個人の資産ですか？また、そうした資産はどのように継承されるのが一般的ですか？こうした資産の継承をどのように管理されていますか？どのような人が継承者となりますか？
１３）Are there environmental issues that need to be adressed from an integral perspective? (Water quality, co2, sustainable energy supply, etc)	
Landscape	

１４）What are the most important landscape features/characteristics of the polder in your opinion? - １５）What are important aesthetic and ecological values of the polder/village? １６）Are there municipal/regional plans for development of these values? (E.g. Is there someting like a landscape vision, ecological development plan, water quality plan, etc.) １７）Did the initial plan/setup work in practice? What changed over time? １８）What are the most important features of the village (Ogata Mura villag)　? Regulations １９）Are there regulations to protect the setup / landscape of the polder? (E.g.Do they need permits to built? If yes what is the procedure?) ２０）Do the people perceive these rules as restrictive? And how do deal with them in practice? ２１）Can the polder be regarded as cultural heritage? If yes, what elements are valuable and important to protect? Dose the local people is positive for maintaining some original houses and some public facilities as their heritage? ２２）In the Netherlands it is hardly possible to protect landscape because of agricultural production, how does it work in practice? ２３）How does the local people understand/accept the polder was made by the Dutch engineering? ２４）When you are the mayor of the village, how was the interrelationship between the neighboring municipalities? How did you work with Akita Prefecture and Ministry of Agriculture? ２５）How do you remember/evaluate the turning point of environmental orientated agriculture and backgrounds it?	１３）全体的な展望として、どのような環境に関する問題があるとお考えですか？（例えば、水質、二酸化炭素、持続可能なエネルギー供給、など） ＜景観・風景＞ １４）干拓地で最も重要な景観の特徴はどのようなものであると考えておられますか。 １５）干拓地や村の美しい景観や生態学的（環境的）な価値はどのようなものであると考えられますか？ １６）こうした価値のある景観や環境を発展させてゆくための地域計画などはありますか？例えば景色形成の指針や生態学的（環境の側面、水質など）についての計画はありますか？ １７）村が始まった時点での干拓地のすべての状態（村や農地、湖）は実際に効果的な計画だったとおもいますか？また、村が形成されてゆく過程で、どのようなものが、時間とともに変化していったと考えられますか？ １８）大潟村（居住地）の特徴はどのようなものだと思いますか？ 規則・計画 - １９）干拓地の景観や環境を保護するための計画や規制はありますか？（例えば、在住者が建物を改修、改築するときに許可を必要としますか？もしあるならば、その手順はどのようなものですか） ２０）村の人々は、建築物に関する制限についてどのように考えていると思われますか？また、規制をどのように扱っていますか。 ２１）干拓地を文化的な遺産とみなされる可能性についてどのようなお考えですか？もし文化的遺産としての価値があれば、どのような要素を保護することが重要であると考えておられますか？また、住民の方は少し残っている元々の住宅や公共施設を保存することを遺産としてどのように考えていると思われますか？ ２２）オランダでは、農業生産のため、景観を保護することがほとんどできません。景観お保護は可能なことでしょうか？ ２３）オランダの技術で干拓地が建設されたことを地域の人々はどのように受け止めておられますか？ ２４）村長をされていたときに、周辺の自治体とはどのような関係だったと思われますか？また、農林

	水産省や秋田県との関係はどのような関係だったと思われますか？ ２５）どのようなことが環境配慮型の農業へと展開してゆく背景にあったと思われますか？