

CHRONICLE

Estonian (Baltic) Urban Forestry and Urban Greening with an Interview with Professor Cecil C. Konijnendijk of Canada

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Abstract

The article provides an overview of research on Estonian urban forests. The focus is on the so-called traditional approach, which considers urban forests from historical perspective as those falling under municipal administration, and their management. A secondary focus is on a modern trend in urban forestry that started in the USA and Canada in the 1960-1970s. One of the pioneers of the trend in Europe was the Danish Forest and Landscape Research Institute. Thanks to the Institute scientists, their counterparts in the Baltic countries (Estonia, Latvia and Lithuania) were also involved in the modern trend of urban forestry research. The second part of the article includes an interview with one of the best-known leaders in urban forestry, Cecil C. Konijnendijk.

Introduction

Already in the Middle Ages, towns undertook to acquire a maximum extent of premises and hinterland to suffice for pastures, woods, water bodies, deposits of construction materials (sand, gravel, limestone, slates) and other essential areas. By the same token, traditional urban forestry has for centuries been about satisfying the city needs for timber and firewood, recreation, water protection and hunting. In one way or another, major medieval towns in Europe had large forested areas nearby, the use of which was regulated by the ruling class of the day (Konijnendijk 1997).

A similar tradition evolved in the medieval towns of the Baltic countries. Their urban forests were located both within and beyond their boundaries. This was the case with the largest towns of the region, Riga and Tallinn, as well as with many smaller ones. In step with the development of forestry, increasing emphasis was laid on the management and prudent use of urban forests to ensure greater satisfaction of the citizens' needs in the long run. At the same time, a corresponding urban forestry institution was founded and the first foresters were instated. All this has been ascertained by researches in Estonia and Latvia. Let us consider the first mentioned

land here, where the use of municipal forests was regulated on Naissaare Island off Tallinn in 1297, i.e. 720 years ago. They could be felled for the needs of Tallinn citizenry and of Toompea (seat of governmental institutions) at the town centre (Sander and Meikar 2000).

The first studies on urban forests were published in the second half of the 19th century, thus at a time when such forests were treated in the context of their time and their management started in accordance with the concepts and traditions of the day. An occasional writing on urban forests was also issued in 1918-1940, i.e. in the Republic of Estonia era (Sander, 1998). Basic research on traditional urban forestry was launched in the last quarter of the 20th century. Initially, the focus was on the forests in the city of Tartu (Meikar 1980); these forests have also been addressed later (Meikar 1990, 2000, 2001d). In the 1980s, studies were also started on urban forests in Tallinn (Sander 1985 a,b). The next year yielded further approaches at an environmental conference and in a printed collection of theses (Ratas 1986a), including the studies published therein (Ratas 1986b; Lepp and Ratas 1986), all dedicated to the city of Tallinn. The subject of urban forests was also covered at subsequent similar conferences with their theses (Eensaar and Sander 1991, 1996, Eensaar 2001). The most comprehensive of

these was the 1996 collection with full-length articles, including a number of writings on urban forestry (Meikar et al. 1996, Meikar and Sander 1996a, b, Ploompuu 1996, Reisner 1996). So far, the surveys of urban forests have predominantly dealt with Tallinn (Sander and Randrup 1998, Meikar, 2001e, Meikar and Sander 1996a,b, 2000, Sander and Meikar 2000, 2003, Pärn 1998, Sander et al. 1992), but also with almost all cities in Estonia (Meikar 2001 a,b,c,d). A number of summary collections have been published (Sander and Randrup 1998, Meikar 2001a). The greatest contribution to the history of traditional urban forestry has been made by science historian Toivo Meikar, who has specialised in the history of forestry. His researches continue to this day (Meikar 2016a,b,c,d, 2017). Along with Estonian studies, corresponding bibliographies have been published (Sander 1998, Meikar and Sander 2001).

Modern trends in urban forestry research

In the 1960-1970s, a new approach to urban forestry was developed in Canada and the USA. The idea of the approach, however, also sprouted in Estonia, though in an indirect and less distinct form. The trendsetters were researches on urban vegetation at the Botanical Garden of the University of Tartu and then Tallinn Botanical Garden, the Academy of Sciences of Estonia. At the University of Tartu, the trend primarily originated from the writings of Professor Viktor Masing, a botanist and ecologist. He took up urban vegetation in 1955 (Läänelaid and Sander 2002). In subsequent writings, he provided a holistic analysis of the structure of urban vegetation, from individual trees to woods, and showed vegetation as part of the ecosystem (Masing 1979, 1980, 1984). In his last two articles, Prof. V. Masing presented an overview of the structure of vegetation by its levels as well as of the aesthetic, economic and ecological criteria for assessing the quality of vegetation. The author also highlighted one of the most important conclusions of his article: that the different criteria for assessing vegetation often led to conflicting results. The frequently conflicting views of the planners, managers, consumers and ecologists of vegetation are the very factors that have motivated Prof. Masing. At the Tallinn Botanical Garden, the trend was associated with the leading climatologist Andres Tarand and several other local researchers (Jüri Elliku, Henn Pärn, Rein Ratas, Jüri Rauk, Heldur Sander). A ground-breaking work was the study by silviculturist Jüri Rauk and climatologist Andres Tarand (Rauk and Tarand 1979), which examined the differences between the northern gardentown Nõmme, founded 100 years ago, and the forest. It was followed by studies on the fragmentation, ecological aspects, pollution and floral diversity of urban forests (Sander 1985a, b, 1987a,

Ploompuu 1996, Pärn 1998). Researches on single trees in city districts based on the geodetic map, which were launched on the initiative of A. Tarand in 1983, were summarised in our subsequent work (Sander and Elliku, 1991). Also, of note were works dedicated to Tallinn flora in the second half of the 20th century. In the collection by the former, both the flora, biomass of plants and tree cutting and planting were covered, among other themes (Tarand 1986, Kukk 1991). A major conceptualization was a monograph on land use in Tallinn (Sander 1987b).

In Europe, the trendsetters of modern urban forestry were researchers in Germany, Denmark and Finland; in Denmark, particularly at the *Danish Forest and Landscape Research Institute* in Hørsholm (director Dr. Niels Elers Koch). The leaders there were Kjell Nilsson, Thomas B. Randrup and Cecil C. Konijnendijk. To this day, plenty of conferences have been held, and outstanding collections and monographs published, on the discipline (Konijnendijk 1997, 1999). As well, a quality journal "Urban forestry and greenery" is issued. On the initiative of Danish researchers Kjell Nilsson and Thomas B. Randrup, ties were established with the Baltic scientists, corresponding conferences were held (Urban Forestry in the Nordic and Baltic Countries) and, thanks to the foreign scientists, various collections and co-authored articles were published (Randrup and Nilsson 1996, Sander and Randrup, 1998, Groth 2001, Randrup et al. 2001, Konijnendijk et al. 2006 a,b, Konijnendijk et al. 2007).

Today, modern trends in urban forestry research are virtually unrepresented in Estonia; let us hope that the following interview with Professor Cecil C. Konijnendijk will give at least a slight boost to such kind of studies in the Baltics, where the urbanisation process is as active as anywhere across the globe.

Interview

Questions of H. Sander: He has published an abundance of articles in both traditional and modern research directions of urban forestry and attended a number of international conferences. H. Sander was a trainee at the Department of Parks and Landscape (head Kjell Nilsson, mentor and contact person Thomas B. Randrup) of Danish Forest and Landscape Research Institute under the Nordic Council of Ministers grant of 15 April-15 July 1996, and, with Mikk Sarv, Estonian coordinator of the COST project E 39 "Trees, Forests and Human Health and Wellbeing" (2005-2008).

Answers of Professor Cecil C. Konijnendijk: Department of Forest Resources Management, Faculty of Forestry, UBC 2045 - 2424 Main Mall Vancouver, BC, Canada V6T 1Z4 cecil.konijnendijk@ubc.ca For two decades Cecil Konijnendijk, a Dutch national currently based in Canada, has studied and taught on the role of trees and

green space in cities and towns, based on his passion for maintaining our contact with nature in an increasingly urban world. His particular interests are green space governance, people-nature relationships and cultural ecosystem services. He has always worked in close dialogue with decision-makers and practitioners. He has led large international research and development projects on urban forestry, both in Europe and in Asia. After employments in the Netherlands, the Nordic countries and Hong Kong, Cecil is now a professor of urban forestry at the University of British Columbia in Vancouver. During his career, Cecil has supervised 20 PhD students, including three by Malaysian scholars, and over 40 Master studies. He has authored over 80 peer reviewed articles and book chapters as well as more than 150 other scientific and popular scientific publications. Cecil has also written and edited several widely read books about urban forestry, is the editor-in-chief of the journal *Urban Forestry & Urban Greening*, and series editor for Springer's *Future City* book series. Finally, he is also an incoming member of the ISA Board of Directors and of the IUFRO Board.

You are a professor at the University of British Columbia in Vancouver, Canada. Can you please describe how and in which directions this discipline first developed in Canada and the U.S.A?

Cecil: In the mid-1960s, a professor at the University of Toronto called Erik Jorgensen came up with the term 'urban forestry' for a project of one of his graduate students. This work built on the focus on so-called 'shade trees' in North America: streets that align streets and avenues and squares, and provide shade, aesthetical values and other benefits. Urban forestry in North America developed very much from this perspective, with the publicly owned street trees as most important focus. Later attention shifted more towards to the overall 'urban forest canopy' and the benefits which this provides to cities and citizens.

You, Cecil, have witnessed the birth of European urban forestry and even the colleagues call you Mr. Urban Forestry. Could you please describe how it all started for you and how should the discipline of urban forestry be defined nowadays?

Cecil: Urban forestry came to Europe first through the UK and Ireland, but it was not before the early 1990s that a European urban forestry community emerged. During the mid-1990s, researchers in Denmark, led by Kjell Nilsson and Thomas Randrup, set up Nordic-Baltic research networks on urban forestry. At the same time, I carried out my PhD study on urban forestry in Europe,

which I finished in 1999. Then I joined the Danish team to help run COST Action E12 'Urban Forests and Trees', which was the first major European research network for urban forestry. After this many new initiatives followed, such as setting up a new journal ('Urban Forestry & Urban Greening'). We also launched the European Forum on Urban Forestry in 1998.

Today most colleagues would agree on a broad definition of urban forestry, which includes the planning and management of all woods, trees and associated vegetation in urban and peri-urban areas. In what direction has urban forestry developed in Europe? Comprehensive research work can be spotted in Germany, Denmark, Sweden and elsewhere. Are there different approaches to the subject?

Cecil: During recent years urban forestry research had really been booming, in Europe, North America but especially also in other parts of the world. In Europe, there are different 'streams' of research. There is a lot of good research on how trees grow in difficult urban conditions, and how we can establish and manage them better. Then there is a lot of attention for assessing the many benefits – or ecosystem services – provided by urban forests. Some research looks more at environmental aspects such as cooling and air pollution reduction. But Europe has also been especially strong in studying the cultural, social and health effects of urban forests. My North American colleagues often mention that they are inspired by European research when these topics are concerned. In some countries there is still a clear distinction between 'tree researchers' and those studying forest ecosystems. But many people, like myself, are interested in both, and also study city-wide urban forest systems.

Contemporary urban forestry has spread a lot but on the other hand it has become more thorough. It deals with the research of city nature (trees, bushes, herbaceous plants and their diversity). A strong interest in a new social aspect dealing with the relationship between urban residents and nature can be seen. Now we know more about how greenery influences peoples' health and many other aspects. They have also been talking about the services of the ecosystem that the urban landscaping offers us. Which trends do you consider to be important nowadays?

Cecil: There has been an increasing focus on these so-called ecosystem services of urban forests, and research has shown how important trees and forests can be, for example for adapting cities to climate change by moderating storm water runoff, cooling the air, etc. The

public health impacts of urban forests are also much better known today, and we know that those living near urban forests or other green space generally have a better mental and physical health. We still need to learn more about the mechanisms: which types of urban forests, urban trees are especially good for us, and why? What should an 'ideal' urban forest look like? Moreover, as Europe's urban populations are becoming increasingly diverse because of, for example, immigration, we also need to recognize that different people can have very different preferences and perceptions related to trees.

On the subject of urban forestry many monographs and journals have been published, many conferences held, and research work is actively taking place. If and how the research work has influenced urban planners? Have the practitioners-city officials taken over something from the research and applied it in practice or does urban forestry tend to be an isolated discipline understood only by the scientists themselves? In your opinion, what do you think, should the forests in the sphere of influence of towns (as compared to logging areas) be maintained differently from forests found further away? Are there differences between the countries? To whom should urban forests belong to – state or municipality?

Cecil: Urban forestry research has always been pretty well connected to practice. Municipal governments are an important funding and partner of urban forestry research, and we have always involved practitioners and planners in our networks and projects. It is easy to lose touch with reality if you don't do that. But we can always do better to make our research even more relevant and applicable.

I definitely think that forests under the direct influence of cities need to have a different management regime than those that are more remote. Recreation will always be a bigger factor as well as various protection services. On the other hand, it's definitely fine to have some timber production as well, as this is an important aspect of keeping urban residents in contact with nature and forestry. There are definitely some differences in attitude here between different countries. In countries such as Finland and Germany, for example, the strong forest culture makes it easier to have some production in urban forestry than in for example, the Netherlands.

Personally, I feel that the local municipality is best placed to own and manage urban forests, as they have the most direct interest in these forests, and also represent the interests of the local community. But some national legislation might be needed to ensure urban forest protection and sustainability also over a longer time.

Is urban forestry in contemporary meaning also taught in universities and is it a common tendency?

Cecil: There are still very few universities that have stand-alone urban forestry degree programs. In Europe, I only know of one university in the UK that offers a real Urban Forestry program. In North America things are a bit different, as there is a longer tradition of recognizing the urban forestry profession, at least in the US. At my university, UBC, we have just set up a Bachelor of Urban Forestry program. It has proven very popular, with about 60 new students each year. We will also start a Master of Urban Forestry in the near future. I just returned from a trip to China where many universities have set up, or considering to start urban forestry degree programs. It is a bit surprising that we have been less successful in Europe, in spite of efforts by, for example, the University of Copenhagen.

You have also taken part in exporting the discipline of urban forestry to China and to the Southeast Asian countries. How productive has this process been in these fast-developing areas and how it had influenced the situation in China?

Cecil: China really is the new frontier for urban forestry. UBC works closely together with several leading Chinese universities in developing high-quality urban forestry education. Many young people in China choose urban forestry as a career, not in the least because of national policies such as the 'Forestry City' program. Many cities, big and small, have embraced urban forestry and want to increase their canopy. A city like Beijing has planted many thousands of hectares of new urban forests in a period of just three years. But it is important to work closely together with the Chinese colleagues to ensure that higher quality standards for tree establishment and management are achieved.

References

- Eensaar, A. (eds.).** 2001. Human Impact on the Environment of Tallinn: abstracts of reports of the scientific-practical conference (November 22, 2001) IV. Tallinn Botanical Garden, Printon, Tallinn, 65 pp. (in Estonian, summaries in English).
- Eensaar, A. and Sander, H. (eds.)** 1991. Human Impact on the Environment of Tallinn: abstracts of reports of the scientific-practical conference (November 22, 1991) II. Tallinn Botanical Garden of *Estonian Academy of Sciences*. Bit, Tallinn, 194 pp. (in Estonian, summaries in English).
- Eensaar, A. and Sander, H. (eds.)** 1996. Human impact on the environment of Tallinn: abstracts of reports of the scientific-practical conference (November, 19-20, 1996) III. Tallinn Botanical Garden of Environment Department

of Tallinn, Bit, Tallinn, 300 pp. (in Estonian, summary in English).

- Groth, N.B.** (ed.). 2001. Cities and networking: the Baltic Sea region: a report on the Interreg IIC project Urban Systems and Urban Networking in the Baltic Sea Region carried out by a team of project executives from the Baltic Sea Region. Hørsholm, Skov & Landskab, 163 pp.
- Konijnendijk, C.C.** 1997. Urban forestry: overview and analysis of European forest policies. Part I: Conceptual framework and European urban forestry history. European Forest Institute Working Paper 12. Joensuu, Finland, 130 pp.
- Konijnendijk, C.C.** 1999. Urban forestry: comparative analysis of policies and concepts in Europe. Contemporary urban forestry policy-making in selected cities and countries in Europe. Academic Dissertation. European Forest Institute Working Paper 20. Joensuu, Finland, 266 pp.
- Konijnendijk, C.C., Nielsen, A.B., Schipperijn, J., Rosenblad, Y., Sander, H., Sarv, M., Mäkinen, K., Tyrväinen, L., Donis, J., Gundersen, V., Åkerlund, U. and Gustavsson, R.** 2006a. Review of urban forestry research and research needs in the Nordic and Baltic countries. A CARE-FOR-US Report. Nordic-Baltic Centre of Advanced Research on Forestry Serving Nordic Urban Societies & Danish Centre for Forest, Landscape and Planning, KVL. Frederiksberg. (www-publication). 32 pp. + appendices. Available online at: <https://jukuri.luke.fi/handle/10024/503814>. Last accessed: 07.10.2017
- Konijnendijk, C.C., Donis, J., Gundersen, V., Gustavsson, R., Mäkinen, K., Nielsen, A.B., Rosenblad, Y., Sander, H., Sarv, M., Schipperin, J. and Åkerlund, U.** 2006b. Social and health issues in Nordic Baltic urban forestry research – Status of research and research needs. In: Nilsson, K. & Nielsen, A.B. (eds.): Urban forestry for human health and wellbeing. Abstract book, COST E39 Research Conference, ASEM 2nd Symposium on Urban Forestry. Copenhagen 28 June – 1 July, 2006 Royal Veterinary and Agricultural University (KVL). Danish Centre Forest, Landscape and Planning. KVL, 44 pp.
- Konijnendijk, C.C., Nielsen, A.B., Schipperijn, J., Rosenblad, Y., Sander, H., Sarv, M., Mäkinen, K., Tyrväinen, L., Donis, J., Gundersen, V., Åkerlund, U. and Gustavsson, R.** 2007. Assessment of urban forestry research and research needs in Nordic and Baltic countries. *Urban Forestry & Urban Greening* 6(4): 297–309.
- Kukk, T.** 1991. List of flora of Tallinn. *Scripta botanica* VII: 1–82.
- Lepp, R. and Ratas, R.** 1986. On stands in Nõmme [District]. In: Ratas, R. (ed.): Human impact on the environment of Tallinn: abstracts of reports of the scientific-practical conference (April 14–15, 1986). Tallinn Botanical Garden of Academy of Sciences of the Estonian SSR, Printing office of Academy of Sciences of the Estonian SSR, Tallinn, 133–135 (in Estonian).
- Läänelaid, A. and Sander, H.** 2002. Viktor Masing's works on dendrology and urban vegetation. *Dendrological Studies in Estonia*, Tallinn III: 260–267 (in Estonian, summary in English).
- Masing, V.** 1979. A city as an ecosystem. *Eesti Loodus [Estonian Nature]* 22(1): 6–11; 22(2): 67–73 (in Estonian).
- Masing, V.** 1980. Structure of green areas in Estonian towns. In: Rõuk, A.-M. (ed.). Estonia. Selected studies on Geography. On the occasion of the 24th International Geographical Congress, Tokyo, Japan. Estonian Academy Publishers, Tallinn 54–63 pp.
- Masing, V.** 1984. Urban landscape from the point of view of an ecologist, I and II. *Journal Eesti Loodus [Estonian Nature]* 27(1): 2–9; 27(2): 66–74 (in Estonian).
- Meikar, T.** 1980. The forests of Tartu in the first half of the 19th century. *Eesti Loodus [Estonian Nature]* 23(11): 724–726 (in Estonian).
- Meikar, T.** 1990. On the history of forests in the city of Tartu. In: Linnus, J. (ed.). Tartu and culture. Printing-office of Paide, Paide, 31–41 (in Estonian).
- Meikar, T.** 2000. Forest instructions of the town of Tartu. *Proc. of the Estonian Academic Forestry Society* XII. Works on the History of Estonian Forestry III: 124–131 (in Estonian).
- Meikar, T.** (ed.) 2001a. Urban forests and urban forestry in Estonia. *Proc. of the Estonian Academic Forestry Society* XVI: 141 pp. (in Estonian).
- Meikar, T.** 2001b. The development and state of urban forests in Estonia in the 20th century. In: Urban forests and urban forestry in Estonia. *Proc. of the Estonian Academic Forestry Society* XVI: 25–29 (in Estonian).
- Meikar, T.** 2001c. The town of Haapsalu as a forest owner. *Proc. of the Läänemaa Museum* V: 112–127 (in Estonian).
- Meikar, T.** 2001d. The forests of the town of Tartu (1918–1947). In: Urban forests and urban forestry in Estonia. *Proc. of the Academic Forestry Society Tartu* XVI: 74–95 (in Estonian).
- Meikar, T.** 2001e. Forest plantations on the sands by Lake Ülemiste. In: Eensaar, A. (ed.): **Human Impact on the Environment of Tallinn: abstracts of reports of the scientific-practical conference (November 22, 2001), Tallinn Botanical Garden, Printon**, Tallinn IV: 47–54 (in Estonian).
- Meikar, T.** 2016a. Estonian towns have owned forests since of old. *Eesti Mets [Forest of Estonia]* 95(1): 54–59 (in Estonian).
- Meikar, T.** 2016b. Forests that fell within urban boundaries in the Republic of Estonia. *Eesti Mets [Forest of Estonia]* 95(2): 52–57 (in Estonian).
- Meikar, T.** 2016c. Along with forests, cities of Järva County also received marshlands and parks. *Eesti Mets [Forest of Estonia]* 95(3): 48–51 (in Estonian).
- Meikar, T.** 2016d. Forests of Kuressaare city provided walking opportunities for holiday-makers and food for livestock. *Eesti Mets [Forest of Estonia]* 95(4): 50–55 (in Estonian).
- Meikar, T.** 2017. The city of Valga gained income from its forests but the expenses were also high. *Eesti Mets [Forest of Estonia]* 96(3): 48–53 (in Estonian).
- Meikar, T., Pärn, H. and Sander, H.** 1996. Forest cultures in Tallinn, their historical development, current areas and used woody species. In: Eensaar, A., Sander, H. (eds.) Human impact on the environment of Tallinn: abstracts of reports of the scientific-practical conference (November, 19–20, 1996). Tallinn Botanical Garden of Environment Department of Tallinn, Bit, Tallinn III: 221–233 (in Estonian, summary in English).
- Meikar, T. and Sander, H.** 1996a. The activity of the head foresters of Tallinn in field of the urban forestry in the years 1864–1944. In: Eensaar, A., Sander, H. (eds.): Human impact on the environment of Tallinn: abstracts of reports of the scientific-practical conference (November, 19–20, 1996). Tallinn Botanical Garden of Environment Department of Tallinn, Bit, Tallinn III: 194–199 (in Estonian, summary in English).
- Meikar, T. and Sander, H.** 1996b. Vater und Sohn Kühnert – Pionere der Forstwirtschaft und des Gartenbaus in Estland. *Allg. Forst- und Jagdzeitung* 167(6): 116–121.
- Meikar, T. and Sander, H.** 2000. Die Forstwirtschaft in der Stadt Tallinn/Reval – ein historischer Zugang. *Allg. Forst- und Jagdzeitung* 171(7): 124–132.

- Meikar, T. and Sander, H.** 2001. Urban forests in Estonia (a bibliographical overview). In: Urban forests and urban forestry in Estonia. *Proc. of the Estonian Academical Forestry Society*, Tartu XVI: 133–141 (in Estonian).
- Ploompuu, T.** 1996. Changes in vascular plant composition in heat forests in urban area in Nõmme (Tallinn). In: Eensaar, A., Sander, H. (eds.) 1996. Human impact on the environment of Tallinn: abstracts of reports of the scientific-practical conference (November, 19–20, 1996). Tallinn Botanical Garden of Environment Department of Tallinn, Bit, Tallinn III: 117–126 (in Estonian, summaries in English).
- Pärn, H.** 1998. Studies on the ecological condition of urban forest of Tallinn, Estonia. In: Sander, H. and Randrup, T.B. (eds.) 1998. Urban forestry in the Nordic and Baltic countries. In: Proc. of a Nordic Workshop on Urban Forestry, held in Tallinn, Estonia, December 1–3, 1997. Danish Forest and Landscape Research Institute & Estonian Agricultural University, Forest Research Institute, Tallinn – Copenhagen: 55–57.
- Randrup, T. B. and Nilsson, K.** (eds.) 1996. Urban forestry in the Nordic countries. In: Proc. of a Nordic workshop on urban forestry, held in Rykjavik, Iceland September 21–24, 1996. Danish Forest and Landscape Research Institute, 59 pp.
- Randrup, T.B., Gustavsson, R. and Christophersen, T.** (eds.) 2001. Urban forestry in the Nordic and Baltic countries. Urban forests under transformation. In: Proc. from an international seminar on urban forestry in Kaunas, Lithuania, April 21–23, 2001. Ministry of Environment and Energy, Danish Forest and Landscape Research Institute, 78 pp.
- Ratas, R.** (ed.) 1986a. Human impact on the environment of Tallinn. In: Abstracts of reports of the scientific-practical conference (April 14–15, 1986). Tallinn Botanical Garden of Academy of Sciences of the Estonian SSR, Printing-office of Academy of Sciences of the Estonian SSR, Tallinn, 168 pp. (in Estonian).
- Ratas, R.** 1986b. On Urban Forests. In: Ratas, R. (ed.). Human impact on the environment of Tallinn. In: Abstracts of reports of the scientific-practical conference (April 14–15, 1986). Tallinn Botanical Garden of Academy of Sciences of the Estonian SSR, Printing office of Academy of Sciences of the Estonian SSR, Bit, Tallinn: 129–132 (in Estonian).
- Rauk, J. and Tarand, A.** 1979. Is [the gardentown] Nõmme a forest or a town? *Eesti Loodus [Estonian Nature]* 22(4): 245–250 (in Estonian).
- Reisner, Ü.** 1996. Cemeteries as part of urban forests and their woody vegetation in Tallinn, Estonia. In: Sander, H. and Randrup, T.B. (eds.) 1998. Urban forestry in the Nordic and Baltic countries. Proc. of a Nordic Workshop on Urban Forestry, held in Tallinn, Estonia, December 1–3, 1997. Danish Forest and Landscape Research Institute & Estonian Agricultural University, Forest Research Institute, Tallinn – Copenhagen, 58–67.
- Sander, H.** 1985a. Urban woodlands: areal distribution and some spatial and ecological connections. *Proc. of the Academy of Sciences of the Estonian SSR. Biology* 34(3): 205–215 (in Russian, summary in English).
- Sander, H.** 1985b. Forest in Tallinn – a fragmented forest. *Eesti Loodus [Estonian Nature]* 28(3): 154–159 (in Estonian).
- Sander, H.** 1987a. Fragmentation indexes: their theoretical analysis and usage in the investigation of inside-block forest stands disunion in Tallinn. *Proc. of the Academy of Sciences of the Estonian SSR. Biology* 36(1): 53–62 (in Russian, summary in English).
- Sander, H.** 1987b. Tallinna maakasutuse struktuur [Structure of land use in Tallinn]. Preprint TBA-7. Tallinn Botanical Garden. Academy of Sciences Estonian SSR. Bit, Tallinn. 63 pp. (in Estonian, summary in English).
- Sander, H.** 1998. Research on urban forests and urban trees in Estonia – A Historical Review and the Present Situation. In: Sander, H. & Randrup, T.B. (eds.): Urban forestry in the Nordic and Baltic countries. Proc. of a Nordic Workshop on Urban Forestry, held in Tallinn, Estonia, December 1–3, 1997. Tallinn–Copenhagen, 5–17.
- Sander, H., Elliku, J.** 1991. Land use and woody plants of dwelling districts of Kalamaja, Kadriorg ja Mustamäe in Tallinn. Preprint TBA-13. Tallinn Botanical Garden. Academy of Sciences Estonian SSR. Bit, Tallinn, 72 pp. (in Estonian, summary in English).
- Sander, H., Elliku, J., Kokovkin, T., Kukk, T., Ploompuu, T., Šestakov, M.** 1992. Comparative characterization of woody plants taxa in different urban habitats of Tallinn, Estonia. *Proc. Estonian Acad. Sci. Ecol.* 41(2): 56–67.
- Sander, H. and Meikar, T.** 2000. Die Bedeutung des Gesetzes von König Erik VI. Menved von Dänemark aus dem Jahre 1297 für die Wälder der nachgelegenen Inseln vor Reval/Tallinn (Estland). *Archiv für Naturschutz und Landschaftsforschung* 39(4): 253–265.
- Sander, H. and Meikar, T.** 2003. Geschichte des im Kulturraum Lustwald Europa liegenden Nordöstlichen Koppeldaltes von Reval/Tallinn (Estland). *Archiv für Naturschutz und Landschaftsforschung* 42(1): 51–64.
- Sander, H. and Randrup, T.B.** (eds.) 1998. Urban forestry in the Nordic and Baltic countries. Proc. of a Nordic Workshop on Urban Forestry, held in Tallinn, Estonia, December 1–3, 1997. Danish Forest and Landscape Research Institute & Estonian Agricultural University, Forest Research Institute, Tallinn – Copenhagen, 78 pp.
- Tarand, A.** (comp.). 1986. Vegetation of Tallinn. Tallinn Botanical Garden of Academy of Science of the Estonian SSR, Valgus, Tallinn, 160 pp. (in Estonian).