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PERSPECTIVES & JOURNEYS ON SDGS

The SDGS Journey: From Learning to Knowing to Disseminating to Mentoring

Venkatesh Govindarajan
Honorary Visiting Professor, The Energy Research Institute's School of Advanced Studies, New Delhi, India.

ABSTRACT | Purpose: This article recounts the author's journey, which began unexpectedly in 2019 with research on the Sustainable Development Goals (SDGs). It describes how this work evolved into scholarly publications and, serendipitously, into teaching practices aimed at motivating and mentoring students to incorporate the SDGs into their academic reports and journal articles. **Design/Methodology/Approach:** The study adopts a reflective, semi-formal approach based on the author's own experience of integrating SDG-oriented research into teaching. It draws on personal outputs, classroom interactions, and student feedback to illustrate how research and teaching roles can be synergistically combined. **Findings:** Over the last four years, the author has embedded SDG perspectives into teaching practices by using his own research outputs as examples. This approach encouraged students to think creatively, move beyond disciplinary and geographical silos, and recognize both synergies and conflicts that are often obscured by fragmented perspectives. **Research Implications:** The findings highlight the importance of bridging research and teaching through SDG-focused thinking, which can serve as a model for integrating global challenges into higher education. Such an approach demonstrates how academic research can influence pedagogy and vice versa, fostering cross-disciplinary insights. **Practical Implications:** Students reported that challenges must not be treated as isolated, local issues. They emphasized the importance of considering ripple effects—positive or negative—on other regions of the world, reinforcing the need for global awareness in problem-solving. Educators can thus promote holistic and interconnected approaches aligned with SDG principles. **Originality/Value:** The article provides a unique reflective account of integrating SDGs into both research and teaching, emphasizing SDG 4 (Quality Education) while illustrating its interconnection with other goals. By documenting the lived experience of aligning research outputs with teaching practices, it offers valuable insights into how higher education can operationalize the SDGs in meaningful ways.

Keywords | Sustainable Development Goals (SDGs); Quality Education (SDG 4); Higher Education; Research-Teaching Integration; Holistic Thinking.

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Corresponding Author: Venkatesh Govindarajan – E-mail: venkatesh_cg@yahoo.com

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1. INITIATION

This author's personal journey with the United Nations' Sustainable Development Goals (SDGs) began on the 5th of September 2019 (coincidentally, that day is observed as Teachers' Day in India) at the **Norwegian University of Science and Technology in Trondheim (Norway)**. This was during a part-time, temporary job the author managed to secure, while taking care of his ailing wife Varshita, in that central-Norwegian city. It resulted in a couple of publications, similarly-named but different in content – one a peer-reviewed scientific journal paper (Venkatesh, 2021a), and the other a popular-science piece in an Indian science magazine, accessible to the common man (Venkatesh, 2021b). After having broken through, so to say (using a cricketing metaphor), with these two, the author added two more [Venkatesh, 2022, 2023a), the second one a kind of an application of SDG-thinking to a project in Zimbabwe sponsored and supported by Plan USA. Not satisfied, the author decided to weave in SDGs into a review article centred on rag-pickers/waste-pickers, an illustration from which appears as Figure 1 in this particular paper.

Figure 1. Situating rag-pickers within the gamut of the SDGs (Venkatesh, 2023b)

2. UPGRADING

...then, there was an invitation from Springer, to submit a book chapter to a compilation of articles focusing on Urban Metabolism. The author now decided to entrench the chapter more deeply and summarily within the SDG framework (different from what he had done in Venkatesh (2023b) - which had been more as an afterthought). The result was a chapter – Venkatesh (2023c) - which directly fed into a lecture on Waste Management in a course titled 'Cleaning Technologies' for third-year engineering students in the **Energy and Environment Programme** of the **Department of Engineering and Chemical Sciences** at **Karlstad University** in Sweden.

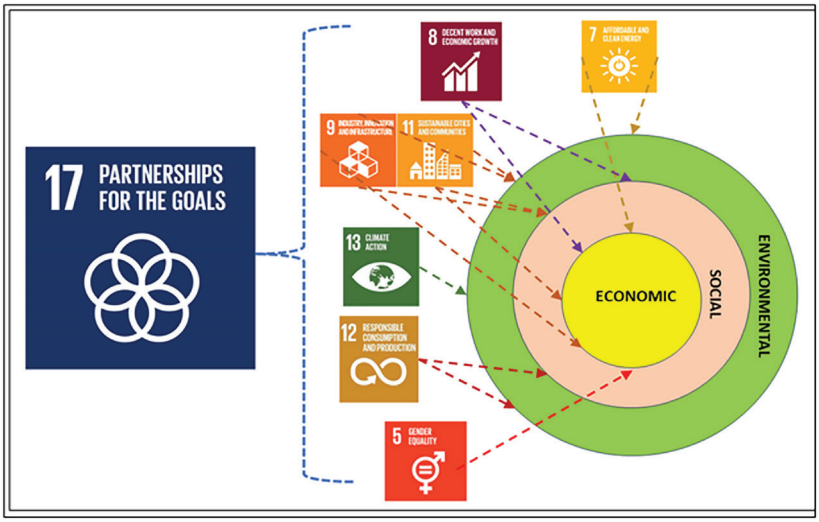
The fact that the author had got his own initiation to the SDGs on what is Teachers' Day in India, he interpreted as a sign to move a step further and higher, and experiment with motivating fifth-year engineering students to incorporate SDGs into group reports they submitted as deliverables of a course – **Research and Development Project** (*Forskning och Utvecklingsprojekt,* in Swedish), in December 2023. The topics assigned to

them pertained to water, energy and resources in general situated within a broader framework of a circular economy (or bioeconomy). The expected output was a streamlined review of a limited number of peer-reviewed journal articles. He advised them to adopt a 'What-When-Where-How-Who-Why' approach to filtering out the essence of every article they read, in keeping with Nobel Laureate Sir Rudyard Kipling's *"I keep six honest serving men, They taught me all I knew; Their names are What and Why and When, And How and Where and Who.'* They were advised to deftly weave in the SDGs, as part of their answers to the 'Why' and 'What'. That was all that they needed. The experiment succeeded wonderfully, and the author was delighted to see the SDGs embedded into the warp and weft of their work. Motivated by how creatively they had done that, he went on to encourage some of them to think about 'upgrading' – from Swedish course reports to peer-reviewed journal articles in English. It seemed a little maverick on the author's part, but the proof of the pudding was after all in the eating. It turned out to be tasty indeed!

3. ENTRENCHMENT AND CONSOLIDATION

Sidebar item 1: Sourced from Jansson et al (2024), which deals with hydrothermal carbonisation and pyrolysis as key biorefinery processes.

> *...Depending on whether more energy **(SDG 7)** or food production **(SDG 2)** is needed, carbonization methods can be optimized through temperature and feedstock, to yield more or less of pyrochar/pyrogas/bio-oil. Adding this sub-sector – if it could be called so and looked upon as an industry in itself with its dedicated streams of inputs and outputs – into the circular bioeconomy, will create new jobs **(SDG 8)**...Harnessing scrap tires for energy-products (or pyrochar as soil amendment, for that matter), does away with the need for landfills **(SDG 11, SDG 15, and SDG 6)** which contaminate groundwater and affect the pedosphere adversely in the longer run.....open landfills (in developing countries) are breeding grounds for disease-causing insects like mosquitoes and flies... As carbon sinks amending the arable soil, they enhance plant and crop growth, allowing them to absorb more carbon dioxide **(SDG 13)**....authors have recommended micro-, and macroalgae as preferred feedstock, to circumvent the food-feed-fiber-fuel impasse that rears its ugly head now and then. How-ever, as mentioned earlier, any conflict with SDG 14 must be minimized, and if possible, completely averted.*



While the primary driver behind replacing fossil fuels with pellets produced from agro-residues is combating climate change (SDG 13), setting in motion strategies and plans (SDG 9) to harness the potential that exists at the confluence of solid waste management (SDG 11) and renewable energy (SDG 7), will influence a host of other SDGs (three of which have already been referred to, within parentheses). If employment opportunities are created in this bio-energy sub-sector, women must not be under-represented in it (SDG 5). All in all, investing in pellet-production plants availing of cheap agro-residues, will open up decent work opportunities all along the value chain (from the field to the furnace, so to say) – SDG 8. However, any rebound effect must be avoided by emphasizing SDG 12; just because the pellets are produced form agro-residues, does not mean that wasteful consumption can be permitted. In order to ensure that everything works in clockwork precision, SDG 17, which builds, nurtures and sustains long-term partnerships, must not be forgotten. Literally, it is the last but by no means the least!

Figure 2. Snapshot from Svensson et al (2024), which focuses on the valorisation of agricultural residues to pellets.

The satisfaction a teacher derives from her/his work is heightened when experiments like the one referred to in the previous section, succeed and add value to the students' stints at the university. The novelty which ushering in the SDGs into the scheme of things, played a big part here. Snapshots from three journal articles fashioned out

of the group-reports referred to earlier are presented in Sidebar item 1 (Jansson et al, 2024), Figure 2 (Svensson et al, 2024), and Figure 3 (Ocklind et al, 2024). They clearly indicate the ability of the students to think in terms of the SDGs and posit their review results within the framework. The authors of Jansson et al (2024) smartly identified the SDGs implicitly addressed in the journal papers they reviewed, before presenting the summary – an excerpt from which is shown in Sidebar item 1.

A smooth transition first to Wilma Harge – one of the co-authors of (Ocklind et al, 2024), devoting a section to the SDGs in her master thesis (Figure 4), and then to guiding a PhD student (Tejasi Shah, **The Energy Research Institute's School of Advanced Studies, New Delhi**, **India**), to understand how her research is enabled by and enables in turn, the attainment of some SDGs, followed in late April this year, and this was instantly assimilated by the student into her first research output (which is under review at the time of writing). Figure 5 which Tejasi Shah constructed after reading, clearly indicates the synergies that are extant among the SDGs shown.

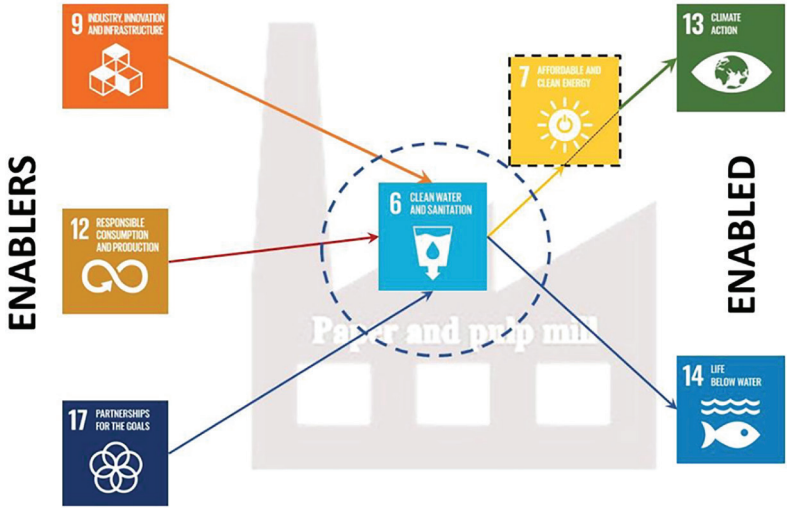


Figure 3. From (Ocklind et al, 2024), which deals with water-use optimisation in pulp and paper mills.

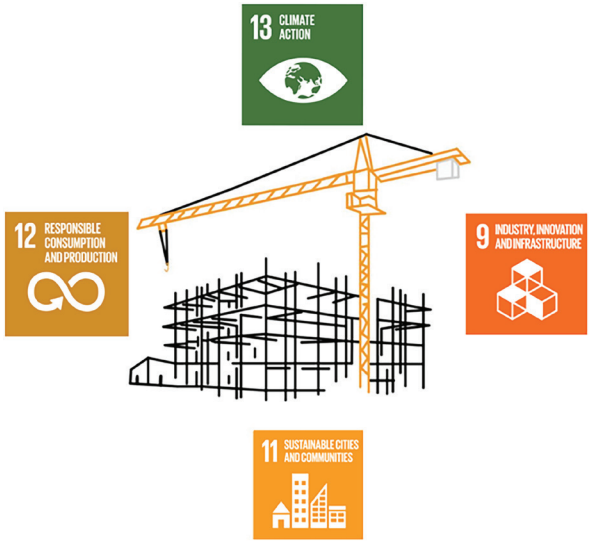


Figure 4. Depiction of SDGs in a student's master thesis

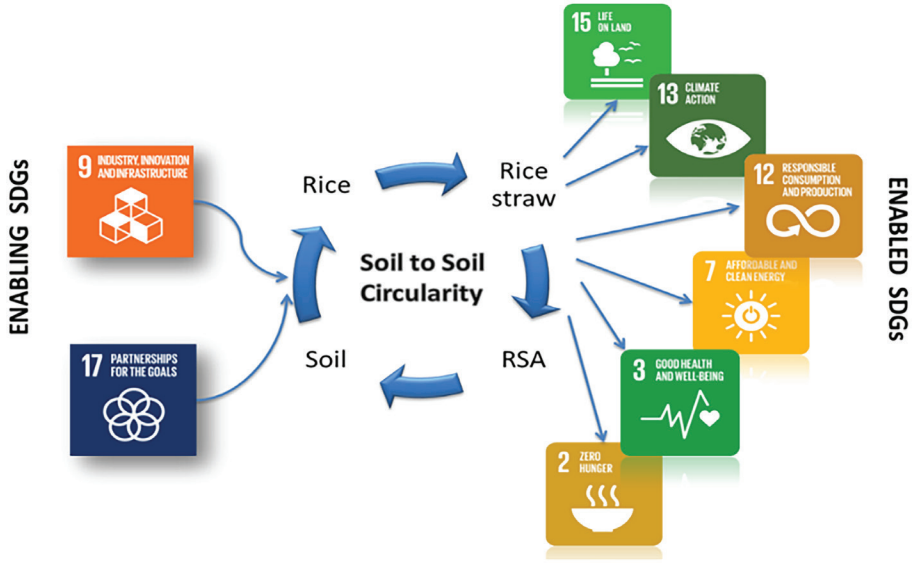


Figure 5. Situating a rice-straw-ash valorising study, within a soil-to-soil paradigm, within SDGs [RSA = Rice straw ash] (Shah, et al, 2024)

3.1. Studentspeak

The author reached out to students at Karlstad University, to find out how they exactly view the incorporation of SDGs into their studies. Eira Jansson, the first author of Jansson et al (2024), responded thus: *I opine that working with SDGs, even in an overarching manner, provides a clear connection to different sustainability challenges, and contributes indisputably to broadening the perspective of any analysis. They also make it easy for readers to arrive at their own conclusions, as regards the importance of furthering the study and research.* Erik Timmermann, one of the co-authors of Svensson et al (2024), remarked that integrating the SDGs into analyses like the ones students do at university instils in them the willingness to look beyond and adopt a holistic perspective. He said, *'Often, we narrow down and focus on aspects like food waste, energy use optimisation and reduction of GHG emissions.*

The 'Why' cannot be answered in a single simple sentence. Every intervention or change that is brought about has ripple effects elsewhere in the world, for someone else, in some other respect.' The ripple effects were also pointed out by Wilma Harge who added that having assimilated them once in a course-deliverable which went on to be published (Ocklind et al, 2024), motivated her to do the same in her master thesis (also see Figure 4) which focused on the end-of-life handling of construction and demolition wastes. *'Grounding research in SDGs also enables one to identify the shortcomings and limitations on completion of the work, and recommend further research to plug the gaps which may have arisen,'* says Wilma.

Malin Kjell (a co-author of Jansson et al, 2024)) is of the opinion that it is quite possible that many tend to look upon the SDGs as just clever verbal constructs on paper. She thereby thinks that it is extremely important to avail of every opportunity available to 'help transit from word to deed.' For students like her, she feels that the first step would be to assimilate the SDGs (some, if not all) in their works – be they reports or the final master theses they would be writing. That will automatically pave the way to contributing more actively to reaching them, when they commence their careers. Moutaz Hammoud was of the opinion that thinking in terms of SDGs enabled him to clearly understand the value and objectives of the review report he had to write, and stresses on the importance of 'opening-up to diverse challenges', for engineers. Anders Svensson, the first author of Svensson et al (2024), believed that incorporating SDGs into course-reports, gives students a very clear idea of the 'why'

behind the report-writing (the 'value' and the 'objectives' referred to by Moutaz). He said that one needs to refrain from merely thinking of it as a formality to be completed to obtain a grade. Constructing the 'research questions' which need to be answered on the basis of the SDGs, gives direction to the process, crystallising thereby a good structure for the same.

From my perspective, integrating the Sustainable Development Goals (SDGs) into research on agricultural residue and its valorisation involves aligning the work with specific SDGs to address environmental and societal challenges. Research in this area can significantly contribute to SDG 2 (Zero Hunger) by improving agricultural productivity and food security through better management and use of crop residues.

Tejasi Shah, the Indian PhD scholar referred to earlier, contends that an interdisciplinary approach, combining agronomy, environmental science, and waste management, enhances the relevance and impact of her research. She supports the incorporation of SDG-related topics in curriculum development by focusing on innovative methods for residue valorisation and their applications, while ensuring that techniques are environmentally friendly and economically viable. Research outcomes, by anchoring themselves on SDG-thinking, will offer the much-needed real-world applications, according to her.

Engineering students ought to be able to zoom in (focus on, for instance, isolated targets within a single SDG) as well as zoom out (make sure to not miss the wood for the trees). This is truer now than ever before! In the Energy and Environment group this author belongs to, within the department of engineering and chemical sciences at Karlstad University, often research adopts a laser-like focus identifying specific targets within SDGs 6, 7 and 13 to focus on. Indeed, the nexuses that exist among SDGs 6, 7 and 13 (and 14, and 15 too) are also studied in some student projects (master theses in other words). The postgraduate students are also introduced to life cycle costing and social life cycle analysis in the eighth semester of their master-degree programme. This opens up to them the spectrum of interlinked issues (and thereby encompassing a host of SDGs), which they are advised not to overlook in their careers ahead. Just as knowledge of water-, energy-, and GHG-footprints is important, the impacts one has on a range of SDGs through one's actions and decisions must be recognised to the greatest possible extent. The positives can be maximised and the negatives truncated as much as possible – the said maximisation and truncation being a continuous process!

4. EDUCATING BEYOND THE WALLS OF UNIVERSITIES

Educating the public is a much larger cause than educating students in universities. The latter is but a small but powerful subset of the former, enabling the accomplishment of the former in the longer run. Quite like the upward transition from learning to mentoring, the work on inspired work on a novella, with the 17 SDGs being embedded into its nine chapters and finding mention at the end of those. The novella – tentatively titled Tribute to the Green Brigade - considered for publication in India at the time of writing but unpublished as yet, is a fictitious account of the lives of ragpickers (informal waste collectors, in other words) in different cities of India and entities positively influencing their well-being. The 'enabling and enabled' nature of the SDGs in the existence of ragpickers, is implicitly brought out in a story which paints a 'highly possible progressive' future for the ragpickers in the country. Table 1 below lists the chapter epigraphs alongside the SDGs which are dwelt upon in each of them.

Table 1. Chapter epigraphs and the SDGs dwelt upon in each chapter of the novella referred to

Chapter #	Epigraph		SDGs in the fray
	Quote	Attributed to	
1	'The sharing of food is like breaking bread. It is very symbolic.'	Robert Irvine, English celebrity chef and talk show host	1, 2
2	'The thief comes only to steal and kill and destroy; I have come that they may have life, and have it to the full.'	John 10:10, The Holy Bible	3, 4
3	'It is time we all see gender as a spectrum instead of as two opposing sets of ideals.'	Emma Watson, English model, actress and activist	5, 11
4	'Nothing is more powerful than an idea whose time has come.'	Victor Hugo, French novelist	6, 7, 9, 13
5	'Be kind, for everyone you meet is fighting a harder battle.'	Plato, Greek philosopher	8, 10
6	'Compassion to animals is intimately connected with goodness in character.'	Albert Schweitzer, French-German polymath	12, 15
7	'Limitless and immortal, the waters are the beginning and end of all things on earth.'	Heinrich Zimmer, German Indologist and linguist	14
8	'Service to other people, especially to the underprivileged can be a truly inspiring and uplifting experience, a source of real joy.'	Dada J. P. Vaswani, Indian spiritual leader	16
9	'We are the change that we seek.'	Barack Obama, former President of the USA	17

While case studies based on metrics abound in literature, and serve the purpose of communicating 'SDGs' so to say, to the experts in the academic research community, decision-makers in governmental bodies, and students of sustainable development, the power and impact of alternate media – popular science, art, literature of various genres, theatre and films – to not merely disseminate information and knowledge for entertainment, but also bring about much-needed change in society, must never be overlooked. For all that we know, these may be more than just the icings on cakes! Sustainable development, like democracy (as defined by Abraham Lincoln), is after all, for the people, by the people, and of the people!

5. CONCLUSION: NOT THE LAST WORD AS YET

While SDGs-centred research automatically encourages multi-/inter-/transdisciplinary approaches to the brainstorming-target setting-researching-implementing quartet, by virtue of the said fact, it also opens up the portals to inter-university/ inter-regional / inter-continental academic collaborations. Students (and researchers) imbibe the much-needed 'out-of-the-silos' thinking, while appreciating as a consequence that what may be 'sustainable' to them, or reasonable targets for that matter, may not be so for collaborators from other parts of the world. Here is where conflicts are revealed – like the one between Innovation/Automation on the pne hand and the livelihoods of informal waste collectors in the developing world countries on the other (SDGs 1, 2 and 3 primarily) (Venkatesh, 2023b). The humane approach to the human dimension, so to say, is inculcated both by students and PhD researchers who effortlessly assimilate SDG-thinking into their learning, thinking, understanding and research outputs (presentations, academic journal papers, master theses etc.).

The 'Why' and the 'Why not' become vade mecum for those who enter university and spend some years there, and remains so, when they leave the centres of learning to enter the corporate world or the public sector. The author is reminded here of a Tamil film song from the 1950s, penned by the legendary poet-lyricist Kannadasan. The first line, translated, goes thus – *'Life cannot go on meaningfully, without the question 'Why' being asked....'* That was over 60 years ago, when the western world was rebuilding itself after the abyss of the second World

War, and developing world countries were experimenting with new-found independence from the European colonial powers. On date, the whole world – First, Transition and Third – is united by common, interlinked and intermeshing concerns related to a host of sustainability issues...and by extension to the survival and continuation of decent human existence in the years ahead.

At the end of 2030, we will all be eager to know how we fared, and how close we managed to get to the targets set in 2015. However, the 17 SDGs will continue to be relevant, as sustainability is a goal which can only be pursued but never reached.

Figure 6. Installations put up by Karlstad University at the city centre, silently urging anyone who passes by to contribute to the SDGs [*Livsmedel:* Food; *Konsumtion*: Consumption; *Energi:* Energy; *Transporter:* Transports] (Photo by G Venkatesh, 19 May 2024)

SDG 4 is christened as Quality Education. Readers will agree unanimously with this author that the word 'quality' there has multiple connotations. One of them, relevant to the times, is the much-needed emphasis on inculcating interdisciplinary and transdisciplinary approaches to problem solving...which in other words, is nothing but the harnessing of the synergies, and mitigation of the conflicts among the SDGs.

LIST OF REFERENCES

G Venkatesh. 2021a. "Sustainable development – quo vadis?" *Problemy Ekorozwoju*, 16(1): 171-179.

G Venkatesh. 2021b. "Sustainable Development – quo vadis?" *Science Reporter,* 58(3): 36-39.

G Venkatesh. 2023a. "A small and beautiful example of sustainability in the heart of Zimbabwe." *Studia Ecologiae et Bioethicae*. 21(1): 35-42. https://doi.org/10.21697/seb.2023.01.

G Venkatesh. 2023b. "Rag-pickers as benefactors and beneficiaries of the sustainable development goals: A brief literature review." *Studia Ecologiae et Bioethicae, 21(2): 87-106*. https://doi.org/10.21697/seb.2023.10.

G Venkatesh. 2023c. "Eight years to Go, to Meet the SDG Targets: Waste Management as Enabler and Enabled." Chapter 12 in Book – Urban Metabolism and Climate Change: Perspective for Sustainable Cities. ISBN: 978-3-031-29421-1. Edited by Rahul Bhadouria et al. Springer Nature. https://doi.org/10.1007/978-3-031-29422-8.

G. Venkatesh. 2022. "A brief analysis of SDG 3 – Good health and well-being – and its synergies and trade-offs with the other Sustainable Development Goals." *Problemy Ekorozwoju*, 17(2): 133-140.

Jansson, Eira, Malin Kjell and Karin Ålund. 2024. The Important Role of Pyrolysis and Hydrothermal Carbonization in a Sustainable Circular Bioeconomy: A Brief Literature Review. *Studia Ecologiae et Bioethicae*, 22(2): 101-115. https://doi.org/10.21697/seb.5805.

Ocklind, Felicia, Kristin Liback, Lova Lundqvist, Wilma Harge, and G Venkatesh. 2024. "Optimisation of Water-Use in Pulp and Paper Mills: A Streamlined Review of Scientific Journal Publications." *Studia Ecologiae et Bioethicae*, 22(3):95-105. https://doi.org/10.21697/seb.5813.

Shah, Tejasi, Ranjana Choudhuri, Udit Soni, Manoj Shrivastava, and G Venkatesh. 2024. "Characterising rice straw ash: Unlocking the hidden potential of agricultural residues." *Studia Ecologiae et Bioethicae,* 22(4). https://doi.org/10.21697/seb.5826.

Svensson, Anders, Madelene Almarstrand, Miranda Nilsson, Jakob Axelsson, Erik Timmermann, and G Venkatesh. 2024. "Valorising agricultural residues into pellets in a sustainable circular bioeconomy : A brief, structured review of selected journal publications." *Problemy Ekorozwoju,* 19(2): 272-278. https://doi.org/10.35784/preko.5803.

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