Areas of green jobs researched in the academic the literature

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Introduction

- The transition to greener economies is and will provide opportunities such as generating
 economic growth, creating new jobs and contributing to social inclusion and poverty reduction.
 The transition however, will also be challenging and must consider things such as job
 displacements and job losses in different industries and overall net employment impacts, there is
 also potential for positive but also sometimes negative impacts on poor households (via changes
 in energy and commodity prices) and loss of livelihoods, and varied impacts on competitiveness
 (International Labour organisation 2018);
- Some of these issues are extensively discussed and tested in the academic literature, but there
 are also potentially other issues that have not been substantially discussed;
- No review studies currently systematically set out the different areas and focuses of empirical studies researching green jobs. Most focus on looking at overall job creation. The presentation today attempts to do the former;
- Systematic review of green jobs is undertaken to look at the different focuses taken in green jobs studies;
- The presentation today explores the different areas of study;
- We need to understand from practitioners and academics which areas they see as particularly important and moderately/little researched. Are there important research topics not currently mentioned?



Research themes

Most researched:

- Typically country level analysis, jobs creation/economic impact (56) + detailed regional/spatial analysis (8);
- Green skills and employment (12);
- Employee attitudes/behaviour, job satisfaction & quality of life and green jobs (10).

Less prevalent, limited research

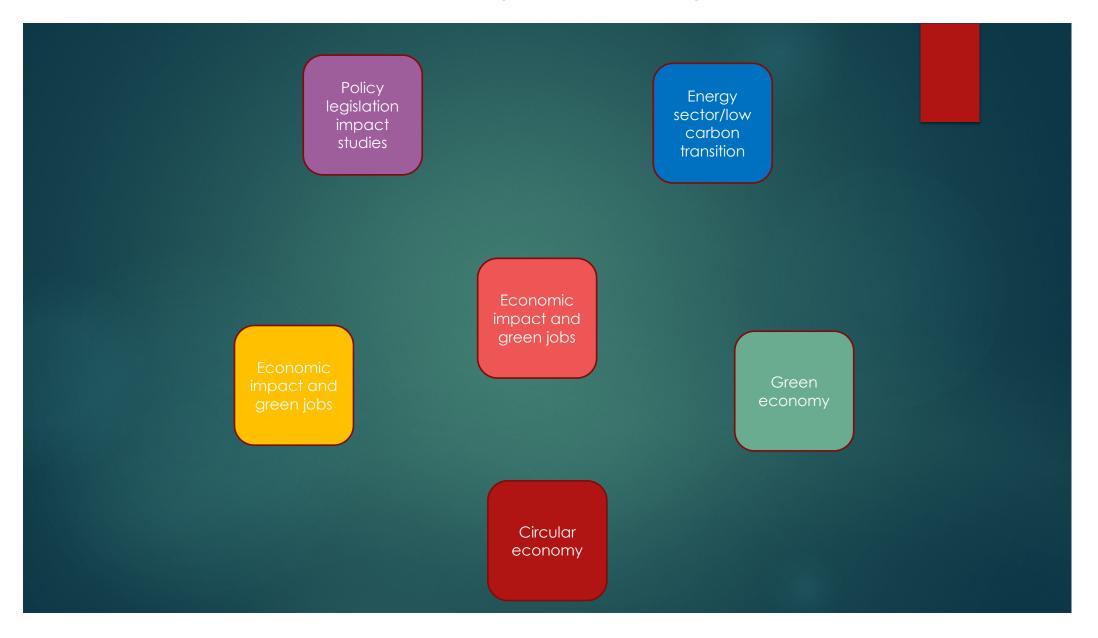
- Micro economic analysis and green jobs (9);
- Green jobs, power, media, justice and politics (8);
- Green innovation and employment (6);
- Definition and measurement of green jobs (5);
- Enablers and barriers to green jobs (5);
- Green jobs and wages (3);
- Coronavirus and green jobs (3);
- Green jobs and environmental impact assessment (3).

Little research

- Gender studies and green jobs (2);
- Green jobs and institutions (2);
- Green jobs and informal economy (1);
- Islamic perspectives and green jobs (1).



Country level analysis



Job creation/net job creation/economic impact, typically

whole economy analysis

Kolsuz and Yeldan 2017 - (policy scenarios for environmental improvement and employment and income impacts - turkey)

Lavecchia and Stagnaro 2014 - (solar subsidy and employment - Italy)

Lee 2017 - (policy, regulation and incentives impact on green jobs creation - USA)

Liu et al 2020 - (policy and acts (waste related) and impacts of employment)

Maxim and Zander 2020 - (fiscal policy and environmental and economic impacts)

Koelbl et al 2016 - (GHG mitigation policy (with or excluding CCS) and employment and GVA impacts -Netherlands)

Yamazaki, 2017 - (Employment impacts from carbon policy (carbon tax) in British Columbia)

Vandyck et al, 2016 - (Quantifying energy and economic and employment changes globally that will result from global climate change agreements).

Guo et al 2017 - (regulation on pollution control and employment impacts U.S.)

Baer at al. (2015) - (fiscal policy (subsidy of CHP) and impacts on employment)

Policy legislation impact studies Monasterolo and Raberto 2018 - (financial green policy an macro employment and economic impact)

Bohringer et al. (2013) - (Policies to promote renewables and employment and welfare outcomes in Germany)

Bouzaher et al (2015) - (policies and green transition turkey, impacts on employment, innovation and productivity explored)

Edwards et al (2013) - (habitat restoration investment impacts on employment in the US)

Popp et al 2020 - (Legislation impacts on green jobs in the US)

Rengs et al 2020 - (testing of distributional outcomes of climate policies)

Vona 2019 - (job losses and willingness to support climate policies)

Kuralbayeva 2019 - (public spending on environment policy and employment and social welfare in a developing country context)

Job creation/net job creation/economic impact, typically whole economy analysis

Garrett-Peltier 2017 - (employment impacts on sectors from clean energy – seems to be USA)

Fragkos and Paroussos 2018 - (Renewable energy transition and employment impacts EU)

Hsu & Nauss 2009 (employment impacts of a green energy transition in China)

Kim and Jeong 2016 - (Electricity sector and improvement of GHGs and employment impacts/reallocations – Korea)

Lehr et al 2012 - (Renewables expansion under different development paths, policy and scenario and employment impacts for Germany)

Markaki et al 2013 - (changes in economy energy investments required to meet energy/environment targets and employment and production impacts)

Markandya et al 2016 - (Energy sector transition and employment impacts)

Bai et al (2021) - (restructuring towards a low carbon economy and jobs impacts for China)

Barra and Ruggiero (2019) - (Green energy form and employment impacts, OECD)

Reddy, 2016 - (scenario analysis of green transition for India and assessment of resource and employment impacts)

Perrier and Quirion 2018 - (Exploration of divergence of models in estimating employment impact from low carbon investments and mechanisms leading to divergence)

Dvorak et al (2017) - (Renewable energy sector investment and employment impacts Czech Republic)

Duscha et al (2016) - (Renewable energy sources and the triple dividend? + policy support options exploration EU)

Dell'anna (2021) - (Energy renewable and efficiency impacts on employment I-O)

Le Treut et al 2021 - (transition in the energy s Argentina and wider economic implications Argentina).

Celik (2021) - (Renewable energy and employment)

Cai et al (2011) - (Power sector and more general transitions to green economy and employment impacts)

Brown et al (2020) - (energy efficiency, jobs impacts)

Energy sector/low carbon transition

Bohlmann at al (2019) - (Green energy transition and employment impacts in South Africa)

Detailed regional and spatial analysis



Detailed regional and spatial – most researched

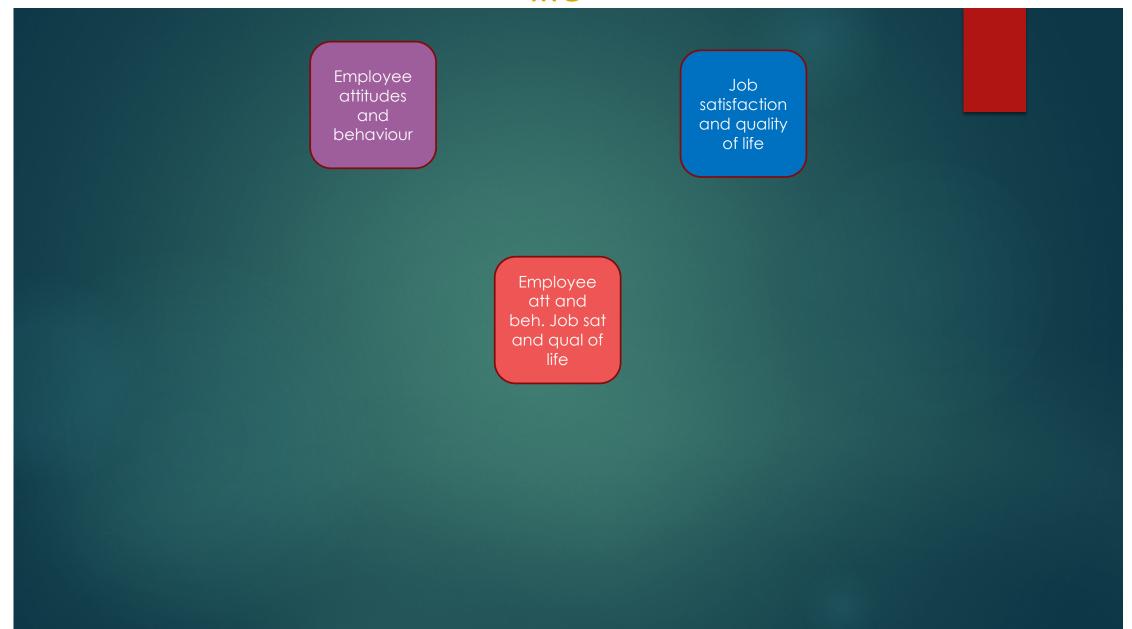
Yi, 2013 - (policy impact at state and local levels in stimulating and maintaining green jobs)

Yi and Liu 2015 - (detailed spatial estimation (allowing assessment of geographical distribution) of green jobs using bottom up methodology and analysis of sub national green energy policies impacts on green jobs in China)

Yoo and Heshmati 2019 - (regulatory impacts on employment and labour productivity for green and non green sectors).

Stavropoulos et al 2020 - (Detailed analysis of circular economy policies in European cities and impact on green jobs and foreign direct investment)

Policy legislation analysis Employee attitudes and behaviour, job satisfaction and quality of life



Job satisfaction and quality of life

Hwang et al., (2020) - identify the relationships between job satisfaction and its key influencing factors on green construction projects, and put forward strategies to improve the job satisfaction.

Iranmanesh et al., (2017) - Investigate the effects of green product and process innovation on job satisfaction.

Kim et al., (2019) - Investigate the linkages among prior job satisfaction, voluntary workplace green behaviour, and job satisfaction (as dependent on group gender composition).

Bellootti et al., (2011) - Provide a longitudinal study of the mental health, quality of life and functional outcomes of Operation Iraqi Freedom/Operation Enduring Freedom veterans enrolled in the Veterans Conservation Corps job training program.

Job satisfaction & quality of life

Pinzone (2019) - Theorise and empirically test the effects of 'green' training on both: "i) OCBEs performed by employees, which are expected to benefit the organisation in terms of environmental sustainability; and ii) job satisfaction, which benefits employees and is an important indicator of the internal social sustainability of the organisation. Furthermore, this study investigates two mediating mechanisms between 'green' training and OCBEs and job satisfaction, respectively. (p.22, Pinzone 2019)

DeHart-Davies et al., (2014) - look at whether organizational rules make employees happy?

Chen et al., (2020) - investigates the potential antecedents (i.e. environmental stewardship orientation (ESO) and job autonomy) and consequences (i.e. job satisfaction, life satisfaction, and intention to leave) of harmonious job passion among employees working in green restaurants in Taiwan. First, how does job passion of green restaurant employees affect their psychological well-being? Second, our study investigates both individual- and job-related antecedents that may trigger employees' job passion.

Green skills and employment



Green skills and employment

Karakul (2016) - Look at government policy on encouraging business and industry to actually create green collar jobs focusing on the Turkish education system.

Otieno (2018) - With a South African, and local government focus analyse the existing and potential green jobs and green qualifications and skills required to develop the green economy for the waste water treatment sector.

Sharpe and Martinez-Fernandez (2021) - Generate a policy framework and apply to investigate the policy readiness in greening employment and supporting a just transition across ASEAN with particular case study analysis of the Philippines.

Jung (2015) - Construct a theoretical framework focused on sustainable development and use to assess the process and contents of South Korea's green job policy.

Li et al., (2018) Conduct an empirical enquiry of the factors that shape household participation decisions for the Grain for Green program and impacts on participants. Falxa-Raymond (2013) - Explore motivation to seek out, participate in, and remain in green job training programs and jobs related to urban natural resource management as well as a range of related questions.

Education and policy

Scully-Russ (2013) - Investigate qualitatively, two Energy Training Partnerships (ETP) funded by the US Department of Labour to train workers for green jobs.

Less prevalent areas, but still reasonably researched

- Micro analysis of green jobs;
- Green jobs, power, media justice, and politics;
- Green innovation and employment;
- Definition and measurement of green jobs;
- Enablers and barriers to green jobs;
- Green jobs and wages;
- Covid 19 and green jobs;
- Green jobs and environmental impact assessment.

Little researched

- Gender studies and green jobs (2)
- Green jobs and institutions (2)
- Green jobs and informal economy (1)
- Islamic perspectives and green jobs (1)

Conclusions

- The vast majority of research has been conducted to study in relation to understand the impacts on overall jobs numbers and overall economic impacts in relation to policy or green energy transitions (or green economy).
- As seen in the review however there are other important areas that have been substantially under researched;
- There is a need for more research in the areas that are moderately or little researched.
- We need to understand from practitioners and academics as to which of these areas they see as most important and important areas for research not currently mentioned at all.

References

- Greening with jobs. International Labour Organisation 2018. World Employment Social Outlook. Available:
 - https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/--publ/documents/publication/wcms 628654.pdf Accessed: 30.5.23
- Other reference see references in working paper