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Capability of Social Life Cycle Assessment for representing the Artisanal Small-Scale Mining sector of Gold in the Amazonian Rainforest of Brazil

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Overview and Introduction

Artisanal Small-Scale Mining

Social Life Cycle Assessment

Field trip

Methods

Results

ASM: Volatile earnings; Often in informal and illegal sector[1] → Ecological problems: e.g. deforestation, sediment input into rivers, mercury exposure[2] → Livelihood

SLCA: estimates positive and negative social and socio-economic aspects along the life cycle of a product or service[3]

Period: September 2018
Brazil, Amazon Rainforest, State of Pará, Tapajós Region

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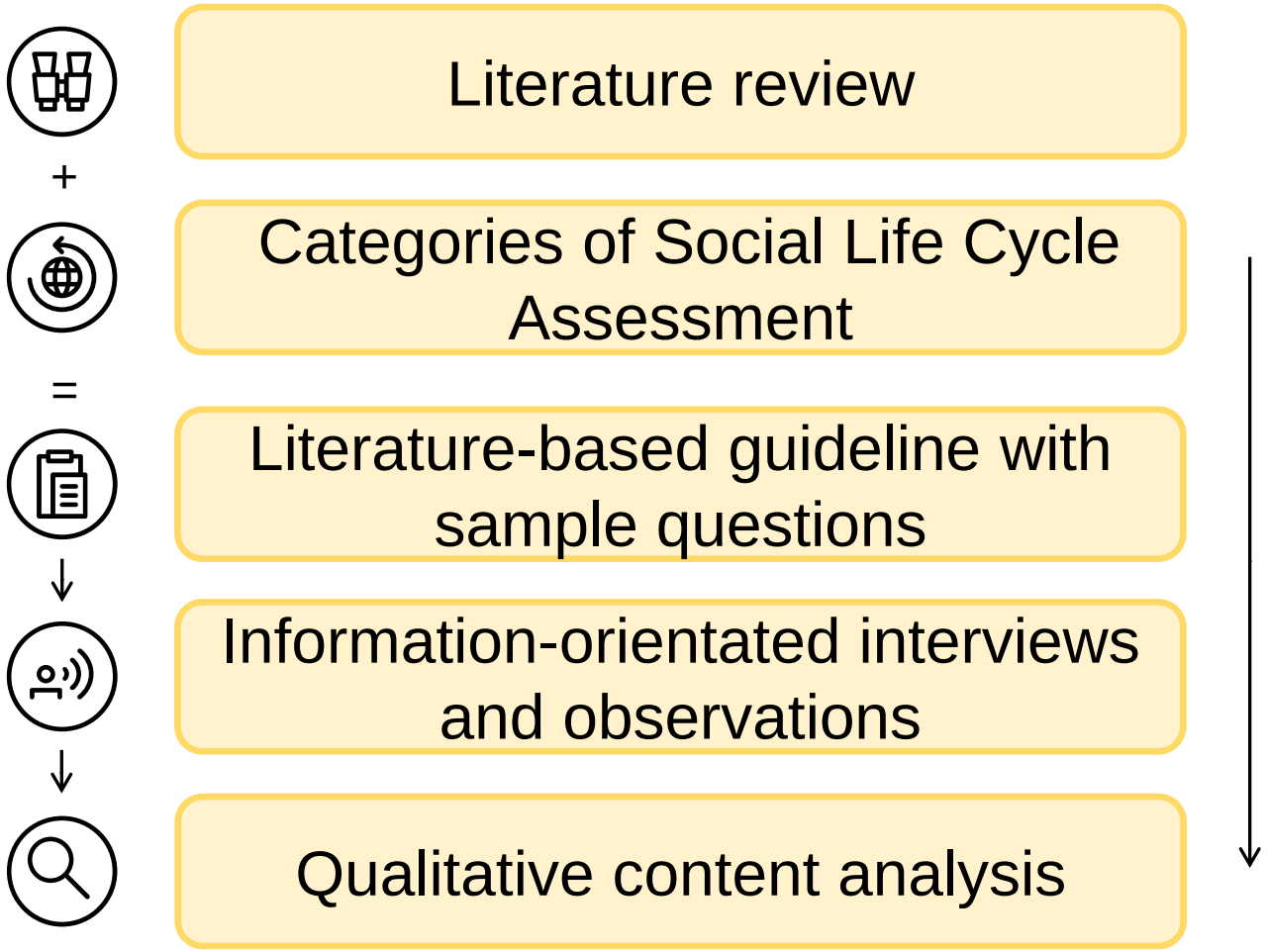
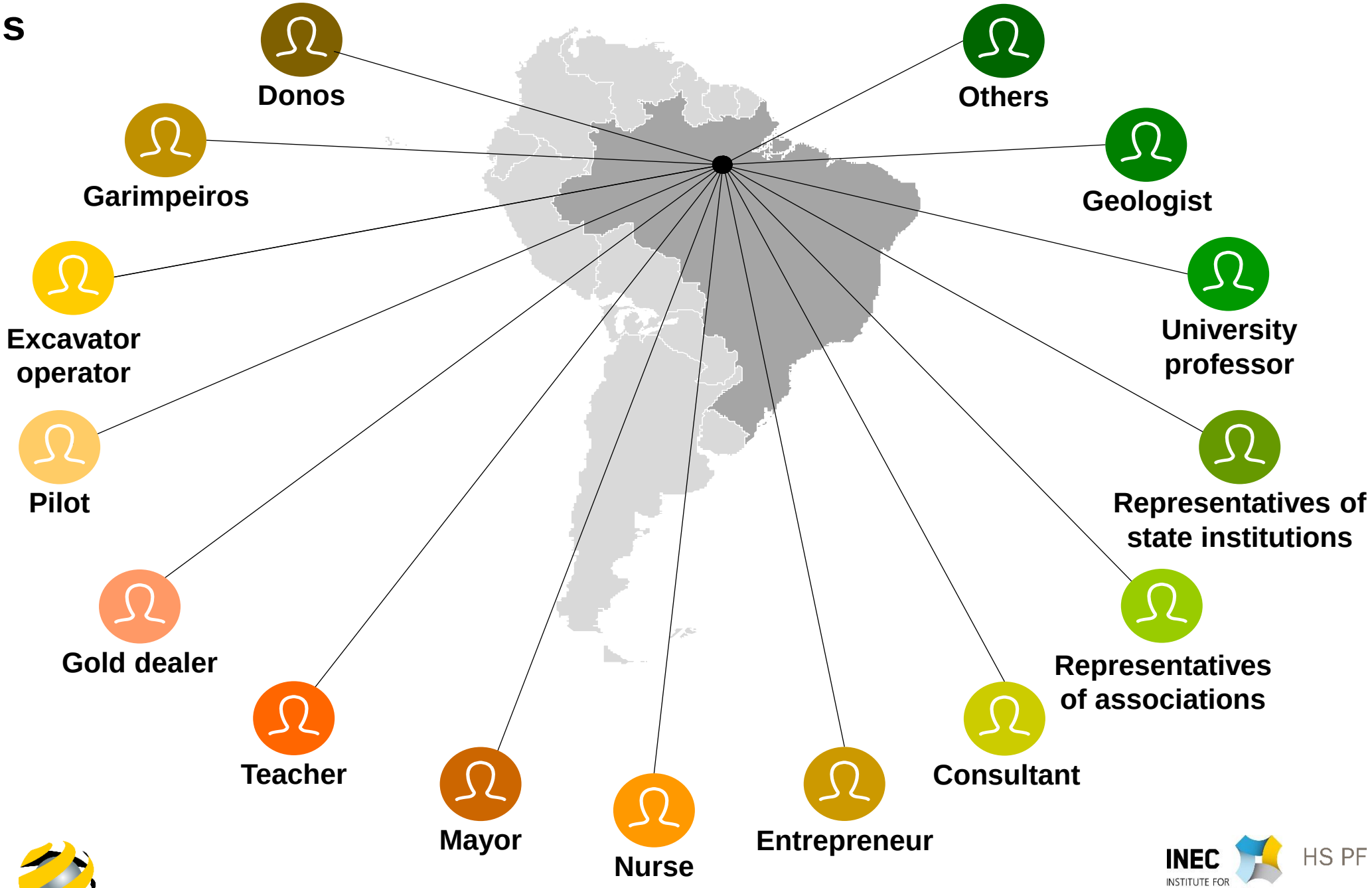
1 Hentschel, T.; Hruschka, F.; Priester, M. Artisanal and Small-Scale Mining. Challenges and Opportunities; Projekt-Consult GmbH, Ed.; iied; WBCSD, 2003. http://pubs.iied.org/pdfs/9268IIED.pdf (accessed on 10 January 2019). 2 Kahhat, R.; Parodi, E.; Larrea-Gallegos, G.; Mesta, C.; Vázquez-Rowe, I. Environmental impacts of the life cycle of alluvial gold mining in the Peruvian Amazon rainforest. Science of The Total Environment 2019, 662, 940–951, doi:10.1016/j.scitotenv.2019.01.246. 3 Benoît, C.; Mazijn, B. Guidelines for social life cycle assessment of products: http://www.unep.fr/shared/publications/pdf/DTIx1164xPA-guidelines_sLCA.pdf (accessed on 24 September 2019).

Methods


Literature review
+
Categories of Social Life Cycle Assessment
=
Literature-based guideline with sample questions
Information-orientated interviews and observations
Qualitative content analysis

Methods



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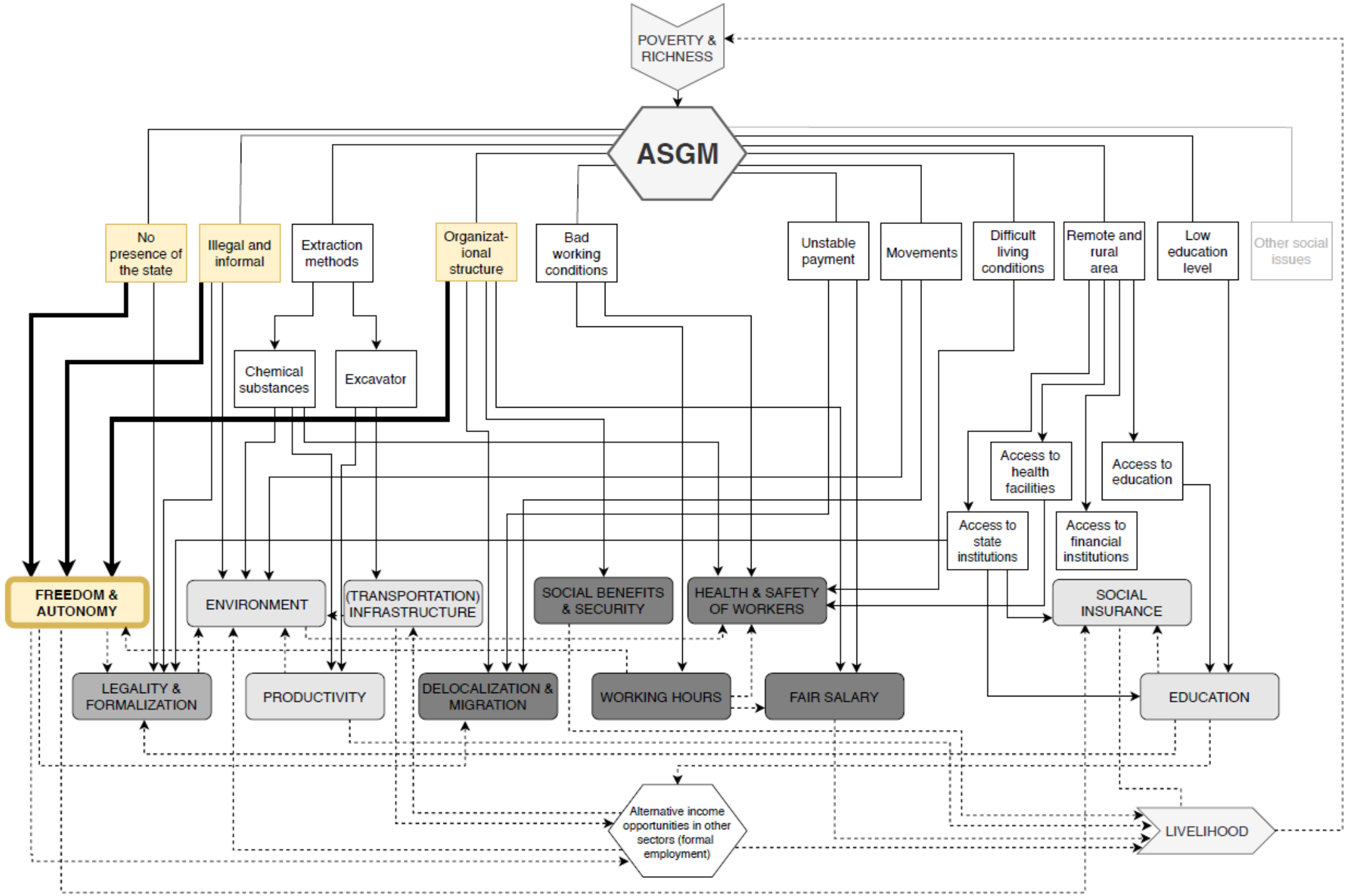
Results

Effect on →

Secondary ----------→ effect on

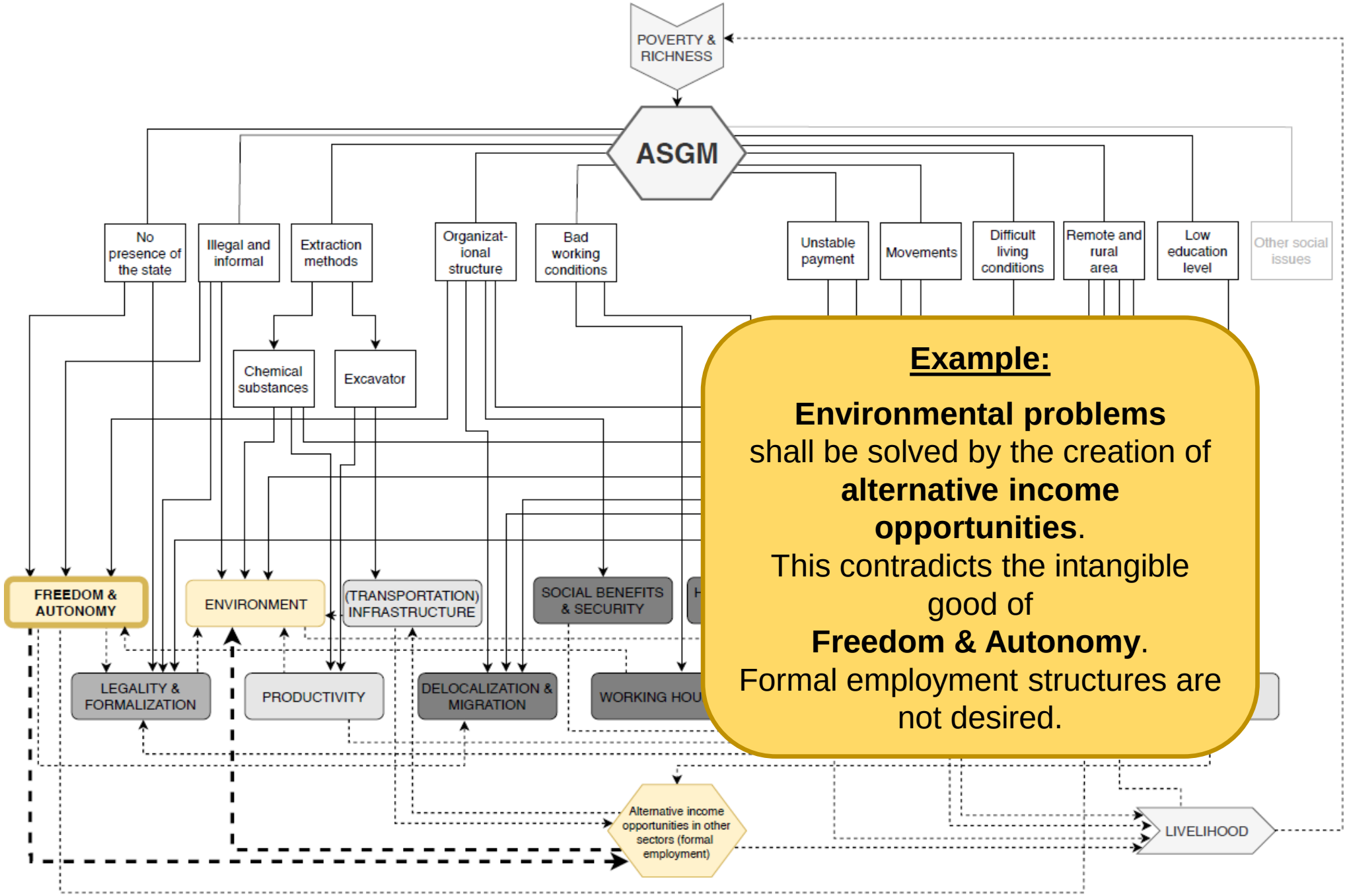
social state

social category



Results

Freedom & Autonomy

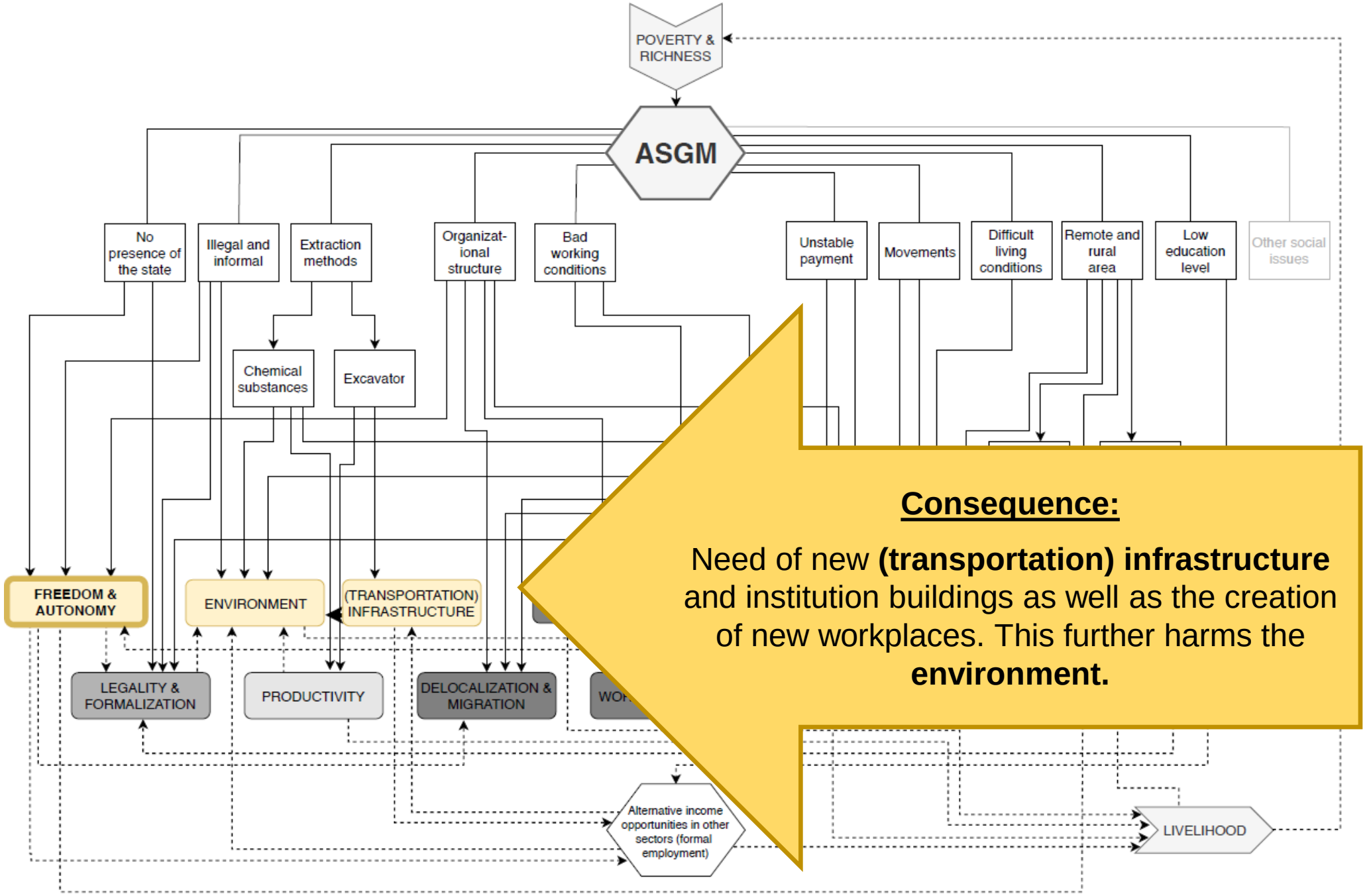


Example:

Environmental problems shall be solved by the creation of **alternative income opportunities**.
This contradicts the intangible good of **Freedom & Autonomy**.
Formal employment structures are not desired.

Results

Freedom & Autonomy



Consequence:

Need of new **(transportation) infrastructure** and institution buildings as well as the creation of new workplaces. This further harms the **environment.**

Conclusion

Holistic view: Ecological problems of ASM can only be solved by paying attention to **social aspects** as well

SLCA cannot represent all aspects as well as relations and interrelations but helps to generate an understanding