

Pedagogic projects of undergraduate nursing courses in the topama region: Analysis regarding the management of waste from health services

Projetos pedagógicos de graduação em enfermagem: Análise do gerenciamento dos resíduos dos serviços de saúde

Proyectos educativos de pregrado en enfermería: Análisis de la gestión de residuos de los servicios de salud

RESUMO

Objetivo: O presente trabalho objetivo realizar uma pesquisa documental nos Projetos Pedagógicos dos Cursos (PPC's) de graduação em Enfermagem de algumas Universidades da região do Tocantins, Pará e Maranhão, com ênfase na temática de gerenciamento dos resíduos dos serviços de saúde. Método: Utilizou-se de pesquisa descritiva de caráter documental cujos dados foram obtidos dos sites dos cursos e/ou universidades enquadradas na pesquisa. A amostra total da pesquisa foi de oito instituições que foram identificadas pela codificação (Ensino Superior), enumeradas de 1 a 8. Resultado: Após análise dos PPC's de cada instituição pode-se notar que o elemento Gerenciamento de Resíduos dos Serviços de Saúde foi identificado nas páginas dos Projetos Pedagógicos de Curso de apenas duas das oito instituições de ensino superior incluídas no estudo. Conclusão: Conclui-se que o enfermeiro tem papel importante no gerenciamento de resíduos dos serviços de saúde, desde o planejamento até a implementação, sendo necessário o conhecimento sobre esta temática.

DESCRIÇÕES: Gestão de Resíduos Sólidos; Ensino Superior; enfermagem

ABSTRACT

Object: The present work aims to carry out a documentary research on the Pedagogical Projects of the Nursing Undergraduate Courses (PPC's) of some Universities in the region of Tocantins, Pará and Maranhão, with an emphasis on the theme of waste management from health services. Method: A descriptive documental research was used, whose data were obtained from the websites of the courses and/or universities included in the research. Result: The total research sample consisted of eight institutions that were identified by the coding (Higher Education), numbered from 1 to 8. After analyzing the PPC's of each institution, it can be noted that the element Health Services Waste Management was identified on the pages of the Pedagogical Course Projects of only two of the eight higher education institutions included in the study. Conclusion: It is concluded that nurses have an important role in the management of waste from health services, from planning to implementation, and knowledge on this topic is necessary.

DESCRIPTORS: Solid waste management; University education; nursing

RESUMEN

Objetivo: El presente trabajo tiene como objetivo realizar una investigación documental sobre los Proyectos Pedagógicos de los Cursos de Graduación en Enfermería (PPC's) de algunas Universidades de la región de Tocantins, Pará y Maranhão, con énfasis en el tema de la gestión de residuos de los servicios de salud. Método; Se utilizó una investigación documental descriptiva, cuyos datos fueron obtenidos de los sitios web de las carreras y/o universidades incluidas en la investigación. Resultado: La muestra total de la investigación estuvo conformada por ocho instituciones que fueron identificadas por codificación (Educación Superior), numeradas del 1 al 8. Luego de analizar los PPC's de cada institución, se puede notar que el elemento Gestión de Residuos de Servicios de Salud fue identificado en las páginas de la Proyectos de Cursos Pedagógicos de solo dos de las ocho instituciones de educación superior incluidas en el estudio. Conclusion: Se concluye que los enfermeros tienen un papel importante en la gestión de los residuos de los servicios de salud, desde la planificación hasta la implementación, siendo necesario el conocimiento sobre este tema.

DESCRIPTORES: Manejo de residuos sólidos; Enseñanza superior; enfermería

RECEBIDO EM: 07/11/2022 APROVADO EM: 12/12/2022

Catilena Silva Pereira

University of Taubate

ORCID: 0000-0002-1396-9924

Marcela De Oliveira FeitosaFederal University of Maranhão
ORCID: 0000-0003-3017-2922**Paulo Fortes Neto**University of Taubate
ORCID: 0000-0001-5837-8450**Darlene Teixeira Castro**

Postdoctoral in Social Networks at the Federal University of Tocantins (UFT) through the Graduate Program in Communication and Society, PhD in Communication and Contemporary Cultures at UFBA, Master's Degree in Information Science at the Pontifical Catholic University of Campinas, Specialization in Methodologies and Languages in EaD by the State University of Tocantins, Specialization in Management and New Technologies by the Lutheran University Center of Palmas, Degree in Journalism and Letters by the Lutheran University Center of Palmas. In graduate school, she works in the disciplines of Scientific Methodology and in the area of communication and technology. She is currently Vice-Rector of the State University of Tocantins-Unitins and professor of the Information Systems Course.
ORCID: 0000-0003-1867-3804

Lílian Natalia Ferreira De Lima

Master in Teaching Environmental Sciences by the Graduate Program in Environmental Sciences at the Faculty of Geosciences of the Federal University of Pará (UFPA). Specialist in Gender Diversity at School from the Federal University of Tocantins (UFT). Graduated in Natural Sciences-Biology from the State University of Pará (UEPA). Professor at the State University of Tocantins (UNITINS). Reviewer for *Acervo Saúde Magazine*. Leader of the Infectious and Neglected Diseases research group (DIN/UNITINS). Vice-coordinator of the Ethics and Research Committee at Unitins (CEP).
ORCID: 0000-0002-0931-3105

Celso De Souza CatelaniUniversity of Taubate
ORCID: 0000-0002-0744-8567**Tarcila Cristina Cunha Cavalcante**Municipal Secretary of Health of São Sebastião-TO
ORCID: 000-0003-2600-1020**Marcos Roberto Furlan**University of Taubate
ORCID: 0000-0003-2600-9225**INTRODUCTION**

Health Services Waste (HSW) is considered to be waste from hospitals, medical clinics or other health services and, therefore, is known as "Hospital Waste" and its handling is part of the biosafety area procedures.⁹

Health services generate a share of 1% to 2% of total solid waste.¹⁰ Studies like that of 10 and the Institute of Applied Economic Research (Ipea - Instituto de Pesquisa Econômica Aplicada), show the inefficiency of the proper disposal of RSS, particularly in relation to the lack of management and correct management in many Brazilian municipalities.

In the TOPAMA region, there is a very important health network in the North and Northeast regions of the country. It encompasses 110 municipalities on the borders of the states of Tocantins, Pará and Maranhão, having as hub the cities of Araguaína (TO), Marabá (PA) and Imperatriz (MA), where the highest numbers of health care services are concentrated.¹⁶

The Health Services Waste Management Plan (HSWMP), based on the principles of non-waste generation and minimization of waste, according to the National Council for the Environment (CONAMA - Conselho Nacional de Meio Ambiente) in resolution 358/05, points out and describes the actions re-

lated to its management, within the scope of health services and contemplates aspects related to the generation, segregation, packaging, collection, storage, transportation, recycling, treatment and final disposal, as well as protecting public health and the environment.³

Studies show that these professionals have little or no knowledge about the HSWMP.⁴ A study highlighted that 68.7% of nurses were unable to describe how chemical waste was segregated, as well as 50% of these professionals were unable to inform whether common waste was subjected to some type of treatment, which demonstrates the need to understand why the nurse is unaware of such attribution, since it should be in-

cluded in the curricular matrix of this professional's training.^{13,14}

In addition, the improper disposal of these materials in landfills or open-air deposits results in a series of negative impacts on the environment and human health, which is condemnable from a sanitary, environmental and social point of view¹, a fact that justifies the importance of knowledge of waste management by health professionals and nursing students, where the following question is asked: Are there any specifications in the pedagogical projects of undergraduate nursing courses in the TOPAMA region about the management of waste from health services? How can the lack of knowledge on this subject affect the professional life of future nurses?

Based on the above, the present study is justified by carrying out a documentary research to know, analyze and compare the Pedagogical Projects of the Undergraduate Nursing Courses (PPC - Projetos Pedagógicos dos Cursos) of some Universities in the TOPAMA region, with emphasis on the issue of waste management from health services through the following elements: profile and skills; historical and conceptual framework; goals; methodology and evaluation present in the material presented on the institutional pages. The article sought to carry out a documentary research on the Pedagogical Projects of the Undergraduate Nursing Courses (PPC) of some Universities in the TOPAMA region, with emphasis on the issue of waste management from health services.

METHOD

This is a descriptive documentary research whose data were obtained from the websites of undergraduate nursing courses at higher education institutions. An analysis matrix was built considering the elements of a PPC. The research was developed from the analysis of the PPC's of nine higher education institutions, located in the TOPAMA region

(Tocantins, Pará and Maranhão).

The research was carried out based on the analysis of the websites of Higher Education Institutions (HEIs), with a nursing course, belonging to the TOPAMA region. The TOPAMA Network involves 110 municipalities with the cities of Araguaína (TO), Marabá (PA) and Imperatriz (MA) as hubs. The cities participating in the study were: Imperatriz-MA, Araguaína-TO, Augustinópolis-TO and Marabá-PA.

The research was carried out through searches in the databases of the websites of universities and higher education institutions with a nursing course belonging to the TOPAMA region, where the PPC's were evaluated (which brings the purpose, objectives, profile of the egress, the structure and curricular matrix, the regulations and the rules of operation of the course), constituting the empirical focus of the research, whose treatment was followed by the technique of content analysis, since it produces inferences from data, verbal and/or symbolic, obtained from questions and observations of interest to the researcher.

Data collection was carried out in March 2021, the institutions selected to carry out the research were those that had the nursing course in a 100% face-

-to-face module, with an ENADE grade greater than or equal to three, belonging to the studied region and that contained the PPC available in full on their official websites. For the research, the ES were identified by encoding ES1, ES2, ES3, ES4, ES5, ES6, ES7, ES8 and ES9.

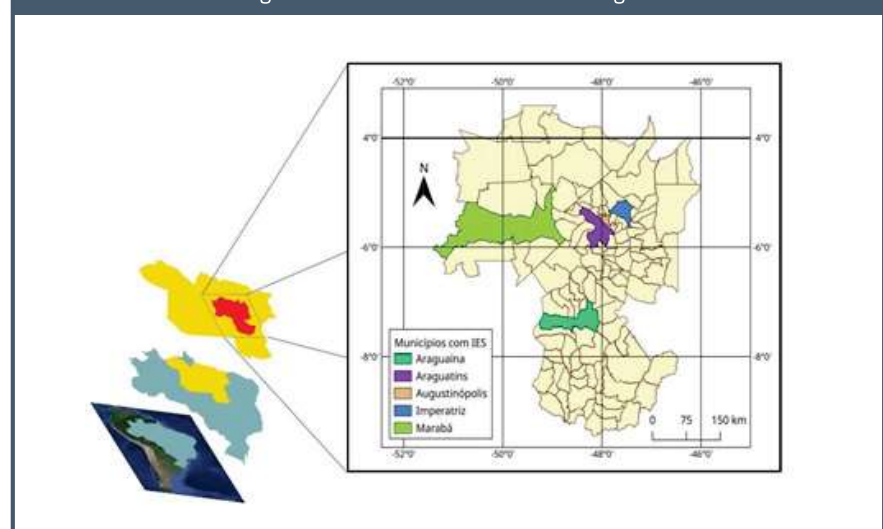
RESULTS

The Pedagogical Projects of the Nursing Course must guide the operation of the course, encompassing structural, curricular, material and human resources aspects, pedagogical aspects, the justification for implementing the course and the egress profile according to the skills and abilities to be achieved.

The element Management of waste from health services was identified in the pages of the Course Pedagogical Projects of two of the nine higher education institutions included in the study. The ES2 and ES9 institutions have a similar curricular matrix where they address this issue in the fourth period within the discipline of environmental health. ES9 clarifies in its PPC that the syllabus will only introduce solid waste management (Table 01).

DISCUSSION

Figure 1 TOPAMA Interstate Health Region



Source: QGIS, 2021

In view of the above, it is observed that there is a significant deficit regarding the inclusion of waste management in health services during the preparation of Pedagogical Projects for the Nursing Course, both for private and public institutions.

It should be noted that the professional nurse has been increasingly required to manage hospital waste, as it is a category that is used to dealing with this type of material, in addition to knowing aspects related to its production and final destination.¹²

COFEN resolution nº 303/2005 portrays the qualification of the Nurse, who is duly registered and regulated in their

Table 1: Analysis of the presence of the theme of solid waste management in nursing courses, 2021.

INSTITUTION	PRESENCE OF HEALTH SERVICES MANAGEMENT	PERIOD	SUBJECT	SUBJECT HOURS LOAD
ES1	No	--	--	--
ES2	Yes	4º	Environmental health	45 hours
ES3	No	--	--	--
ES4	No	--	--	--
ES5	No	--	--	--
ES6	No	--	--	--
ES7	No	--	--	--
ES8	No	--	--	--
ES9	Yes	5º	Environmental Education and Sustainability	30 hours

Source: The author

Table 02: Analysis of the bibliography made available in the PPC's of nursing courses, 2021

INSTITUTION	PERIOD	CONTENT	BASIC REFERENCE	COMPLEMENTARY REFERENCE
ES1	--	--	--	--
ES2	4º	Nursing in the study of ecosystems and their relationship with human and environmental health. The concept of environment in nursing theories. Healthy housing and basic sanitation. Health care waste management. The environment in communicable diseases. Types of pollution and health implications. Global environment, climate change, and sustainable development in health. Pesticides and implications for human health. Environmental factors for cancer.	- Kormondy, E. J.; Brown, D. E. Ecologia humana. São Paulo: Atheneu, 2002. 503 p. ISBN: 8574540730. -Philippi Junior, A. (Editor). Saneamento, saúde e ambiente: fundamentos para um desenvolvimento sustentável. São Paulo: Manole, 2005. 842 p. - Odum, Eugene P; BARRET, Gary W. Fundamentos de ecologia. São Paulo: Thompson Learning, 2007. 612 p. ISBN: 9788522105410. - Rouquayrol, M. Z.; SILVA, M. G. C. (Org). Epidemiologia & saúde. 7. ed. Rio de Janeiro: Medbook, 2013. 709 p. ISBN: 978859997842.	- Carvalho, I. C. M. Educação ambiental: a formação do sujeito ecológico. 6. ed. São Paulo: Cortez, 2012. 255 p. ISBN: 9788524919725. - Cohn, A. Saúde no Brasil: políticas e organização de serviços. 5. ED. São Paulo: Cortez: Cedec, 2003. 133p. - De angelis, R. C. A importância dos alimentos vegetais na proteção da saúde: fisiologia da nutrição protetora e preventiva de enfermidades degenerativas. 2.E D. São Paulo: Atheneu, 2006. 317p. - Figueiredo, Nebia Maria Almeida De; Tonini, Teresa. Sus e psf para enfermagem: praticas para o cuidado em saude coletiva. Sao Caetano do Sul,Sp: Yendis, 2008. 312. - Gliessman, S. R. Agroecologia: processos ecológicos em agricultura sustentável. 4 ED. Porto Alegre: Ed.Universidade/Ufrgs, 2009. 654p
ES3	--	--	--	--
ES4	--	--	--	--
ES5	--	--	--	--
ES6	--	--	--	--
ES7	--	--	--	--
ES8	--	--	--	--
ES9	5º	Ecology; General characteristics of the atmosphere, water and soil; Air, water and soil pollution; Environmental legislation; Forest Resources; Solid Waste; Agriculture and Environment; Environmental Geoprocessing; Sanitation; Public health; Agenda 21; Urban Environment; Sustainable Buildings; Energy and Environment; Environmental Management Systems; Corporate Environmental Management; Environmental Licensing and Environmental Education	Brasil. Constituição (1988). Constituição da República Federativa do Brasil. Brasília, DF: Senado Federal, 1988. Rosa, Henrique, A., Fraceto, F., Moschini-Carlos, organizadores, V. -. (01/2012). Meio Ambiente e Sustentabilidade. p. 88-102. [Minha Biblioteca]. Retirado de https://integrada.minhabiblioteca.com.br/#/books/9788540701977/ SANTOS, dos, M. A. (05/2017). Poluição do Meio Ambiente. p. 3-23. [Minha Biblioteca]. Retirado de https://integrada.minhabiblioteca.com.br/#/books/9788521634140	Barsano, Roberto, P., Barbosa, Pereira, R. (06/2013). Meio Ambiente - Guia Prático e Didático, 2nd edição. p. 15 - 33. [Minha Biblioteca]. Retirado de https://integrada.minhabiblioteca.com.br/#/books/9788536521664/ CONAMA. Conselho Nacional do Meio Ambiente. Resolução 001 / 1986 - Avaliação de Impacto Ambiental. Brasília, 1997.

Source: The author

respective Regional Nursing Council, to assume the Technical Responsibility of the HSWMP, which emphasizes the indispensability of this knowledge even during the academic life.

Taking into account that the nursing professional is one of the biggest generators of HSW due to the fact that he is responsible for the development of various care activities, his role in the management and management of waste, as well as in the planning and implementation of the HSWMP according to the reality of each institution, it is fundamental.¹⁴

Therefore, it is necessary for this professional to have technical and scientific knowledge, so that he can solve the problems related to the incorrect disposal of waste from health units, which end up jeopardizing the integrity of both the team and the clients themselves.¹⁵

Still performing a comparison between the PPC's of the nursing course of the nine studied ES, the curricular matrices and the basic and complementary bibliographical references were taken into account. As for the content, the two institutions that contain the theme showed superficially what is covered in the discipline. Regarding the bibliography, it can be noted that none of the suggested

ones effectively encompass the Management of Health Services Waste.

About managing HSW¹³ demonstrated in their studies that despite the fundamental role of nurses in this intervention, their knowledge on the subject is still considered unsatisfactory, especially on the stages of RSS management and on the formation of the HSWMP, which constitutes a lack of knowledge about the negative impacts that poor handling of this waste can have on the health of workers, the community and the environment.

A study carried out on the knowledge of the nursing team about the segregation of solid waste in a hospital environment, and reached the conclusion that there is a lack of preparation on the part of the nursing team working in hospitals, since many of them are unaware of the types of waste, the plan and stages of waste management, as well as the damage generated in its practices.² Confirming this finding, associating this lack of knowledge with insufficient training and permanent education on the part of these professionals.^{13,14}

CONCLUSION

The main objective of this study was

to evaluate, present and compare the issue of waste management in health services in the Pedagogical Projects of Nursing Undergraduate Courses (PPC) at some Universities in the TOPAMA region. The study showed that the element Waste management of health services is present only on the pages of two of the eight Pedagogical Course Projects of the analyzed institutions, one of them clarifies that the syllabus will only make an introduction to solid waste management, not delving into the subject.

After analyzing the PPC's, it was concluded that the objectives of the study were achieved, since it can be observed that there is still a significant deficit regarding the insertion of the theme of health waste management in the curriculum of the academic training of nurses, opposing the expectations of Resolution 303/2005 of the Federal Council of Nursing (COFEN), which enables nurses to plan and execute the Health Services Waste Management Plan.

Thus, this research will serve as a basis for understanding the difficulties encountered by nurses in the management of health service waste due to the lack of training from academic training to professional life.

REFERÊNCIAS

1. Brasil. Resolução RDC N°. 222, De 28 de Março De 2018. ANVISA, Agência Nacional de Vigilância Sanitária, Ministério da Saúde – Brasília, 2018.
2. Bataglin, M. S., de Souza, M. H. T., & Camponogara, S. (2012). Conhecimento da equipe de enfermagem sobre a segregação dos resíduos sólidos em ambiente hospitalar. *Ensino, Saúde e Ambiente*, 5(3).
3. Brasil, Ministério do Meio Ambiente. Política de Resíduos Sólidos, Lei n° 12.305/10. 2010.
4. Brasil. Constituição da República Federativa do Brasil de 1988. p. 29. Disponível em: http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm. Acesso em: 11/08/2019.
5. Brasil. Ministério da Saúde. Agência Nacional de Vigilância Sanitária. Manual de gerenciamento de resíduos de serviços de saúde / Ministério da Saúde, Agência Nacional de Vigilância Sanitária.

– Brasília : Ministério da Saúde, 2006. 182 p. – (Série A. Normas e Manuais Técnicos).

7. Conama. Resolução CONAMA 358, de 29 de abril de 2005. Dispõe sobre o tratamento e a disposição final dos resíduos dos serviços de saúde e dá outras providências. *Diário Oficial da República Federativa do Brasil*, Brasília (DF), 04 maio 2005.

8. Cofen, Conselho Federal de Enfermagem. RESOLUÇÃO COFEN-303/2005. Cofen – Conselho Federal de Enfermagem. Disponível em: http://www.cofen.gov.br/resolucao-cofen-3032005_4338.html. Acesso em: 02/05/2019.

9. Feitosa, Marcela de Oliveira. Gerenciamento dos resíduos de serviço de saúde: estudo em dois hospitais da microrregião do Bico do Papagaio – Tocantins – Brasil, Dissertação (Mestrado em Ciências Ambientais) UNITAU, Taubaté-SP, 2013.

10. Martins Fernanda Costa, et al. Gerenciamento de Resíduos

- de Serviços de Saúde: Conhecimento da Equipe de Enfermagem. Ciências Biológicas e de Saúde Unit, Aracaju- SE v. 4, n. 2, p. 169-184, Out. 2017, p.180.
- 11.Ipea - Instituto de Pesquisa Econômica Aplicada. Resíduos sólidos urbanos no Brasil: desafios tecnológicos, políticos e econômicos. 2020. Disponível em: <https://www.ipea.gov.br/cts/pt/central-de-conteudo/artigos/artigos/217-residuos-solidos-urbanos-no-brasil-desafios-tecnologicos-politicos-e-economicos>. Acesso em: 05/06/2021.
- 12.Ogata, Igor Souza et al. Avaliação da qualidade do gerenciamento dos resíduos sólidos em laboratórios de análises físico-químicas e microbiológicas: uma abordagem multicriterial. Revista de Estudos Ambientais, [S.l.], v. 22, n. 2, p. 22-31, maio 2021. ISSN 1983-1501. doi: <http://dx.doi.org/10.7867/1983-1501.2020v22n2p22-31>.
- 13.Sanches Apm, Mekaro Ks, Figueiredo Rm, Andre Scs. Health-Care Waste: Knowledge of Primary Care nurses. Rev Bras Enferm [Internet]. v. 71, n.5, p.2367-75, 2017. DOI: <http://dx.doi.org/10.1590/0034-7167-2017-0244>.
- 14.Santos, Elitiele Ortiz et al. Aprendizagem baseada em problemas no ensino da enfermagem. Revista Contexto & Saúde, v. 17, n. 32, p. 55-66, 2017. Disponível em: <https://revistas.unijui.edu.br/index.php/contextoesaude/article/view/6353>. Acesso em: 30 de JUN DE 2021.
- 15.Silva, Ivanilton Santana da. A enfermagem no gerenciamento dos resíduos de serviços de saúde: uma revisão narrativa. Universidade Católica do Salvador. Faculdade de Enfermagem. SALVADOR-BA 2020, 27p.
- 16.Uft, Universidade Federal do Tocantins. Rede Topama: Gestão e Planejamento em Saúde Pública. Organizadores: Paulo Fernando de Melo Martins e Renata Junqueira Pereira; Autoras: Andrielly Gomes et al. - Palmas, TO: UFT/Central Qualitopama, 2021. 156p.:il. Color
- 17.Kormondy, E. J.; Brown, D. E. Ecologia humana. São Paulo: Atheneu, 2002. 503 p. ISBN: 8574540730.
- 18.Philippi Junior, A. (Editor). Saneamento, saúde e ambiente: fundamentos para um desenvolvimento sustentável. São Paulo: Manole, 2005. 842 p.
- 19.Odum, Eugene P; BARRET, Gary W. Fundamentos de ecologia. São Paulo: Thompson Learning, 2007. 612 p. ISBN: 9788522105410.
- 20.Rouquayrol, M. Z.; SILVA, M. G. C. (Org). Epidemiologia & saúde. 7. ed. Rio de Janeiro: Medbook, 2013. 709 p. ISBN: 978859997842.
- 21.Carvalho, I. C. M. Educação ambiental: a formação do sujeito ecológico. 6. ed. São Paulo: Cortez, 2012. 255 p. ISBN: 9788524919725.
- 22.Cohn, A. Saúde no Brasil: políticas e organização de serviços. 5. ED. São Paulo: Cortez: Cedec, 2003. 133p.
- 23.De angelis, R. C. A importância dos alimentos vegetais na proteção da saúde: fisiologia da nutrição protetora e preventiva de enfermidades degenerativas. 2.E D. São Paulo: Atheneu, 2006. 317p.
- 24.Figueiredo, Nebia Maria Almeida De; Tonini, Teresa. SUS E PSF PARA ENFERMAGEM: PRÁTICAS PARA O CUIDADO EM SAÚDE COLETIVA. Sao Caetano do Sul,Sp: Yendis, 2008. 312.
- 25.Gliessman, S. R. Agroecologia: processos ecológicos em agricultura sustentável. 4 ED. Porto Alegre: Ed.Universidade/Ufrgs, 2009. 654p