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Attachment 1:The Assessment Of Organizational Capacity And Physical Infrastructure In Farmworker Communities For Vulnerability To Heat Stress

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Annotated Bibliography

Means & Methods

Abarquez, I. and Z. Murshed (2004) "Community-Based Disaster Risk Management: Field Practitioners' Handbook" ADPC (Asia Disaster Preparedness Centre), Bangkok

CBDRM specifically includes at risk communities in the planning, implementation, monitoring and evaluation of their risk reduction measures. This avoids the trap of collapsing disaster into a crude collection of physical threats. Instead, disaster response is a form of political action that characterizes risk as a social convention and sees the uneven distribution of vulnerability among marginalized communities.

The purpose of the CBDRM Field Practitioners' Handbook is to help equip CBDM or CBDRM practitioners with theories and practical tools that can be applied in community work. The Handbook is divided into three parts:

- Part 1, Community-Based Disaster Risk Management: A Framework for Reducing Risk. The purpose of the first part is to clarify the basic concepts of CBDRM.
- Part 2, Resource Packs. The second part covers essential tools for implementing various stages of the CBDRM process.
- Part 3, Major Considerations in undertaking CBDRM. The third part discusses tools on two cross-cutting themes related to CBDRM - Gender Conscious Approach to CBDRM and Disaster Risk Communication (DRC).

There are three key concepts that have been introduced in this handbook. These are: Community-Managed Implementation, Participatory Disaster Risk Assessment and Action, Gender Conscious Approach to Disaster Risk Reduction. Community management of development programs or risk reduction measures is the implicit philosophy behind Community-Based Disaster Risk Management (CBDRM) and Community-Based Disaster Preparedness (CBDP). Community-managed implementation as described in Section 6 of Part 2, refers to a process where at risk communities (or groups) are directly and actively engaged in planning, implementation, monitoring and evaluation of their risk reduction measures. This includes Participatory Disaster Risk Assessment (PDRA) and Analysis, identification of risk reduction measures, development of action plans and implementation and evaluation of plans.

Corburn, J. (2003). "Bringing local knowledge into environmental decision making" Journal of Planning Education and Research 22(4): 420.

This article reveals how local knowledge can improve planning for communities facing the most serious environmental and health risks. These communities often draw on their firsthand experience—here called local knowledge—to challenge expert-lay distinctions. Community participation in environmental decisions is putting pressure on planners to find new ways of fusing the expertise of scientists with insights from the local knowledge of communities. Using interviews, primary texts, and ethnographic fieldwork, this article defines local knowledge, reveals how it differs from professional knowledge, and argues that local knowledge can improve planning in at least four ways

(1) epistemology, adding to the knowledge base of environmental policy;
(2) procedural democracy, including new and previously silenced voices;
(3) effectiveness, providing low-cost policy solutions; and
(4) distributive justice, highlighting inequitable distributions of environmental burdens.

Francis, M. (2001) "A case study method for landscape architecture" Landscape Journal 20(1): 15.

Case studies are widely used in most professions, including medicine, law, engineering, business, planning, and architecture. This practice is becoming increasingly common in landscape architecture as well. The primary body of knowledge in landscape architecture is contained in the written and visual documentation—that is, stories—of projects, be it well-known ones such as New York's Central Park, or more modest projects such as a small neighborhood park. Together, these cases provide the primary form of education, innovation, and testing for the profession. They also serve as the collective record of the advancement and development of new knowledge in landscape architecture. This article summarizes a research project commissioned by the Landscape Architecture Foundation (LAF) in 1997 to develop a case study method for landscape architecture. The project concludes that the case study method is a highly appropriate and valuable approach in landscape architecture. This article presents a case study methodology for landscape architecture including its limits and benefits, a suggested methodology and format, and an example case study of Bryant Park in New York City. With increased rigor and funding, the case study method promises to be an increasingly common and effective form of analysis, criticism, and dissemination for landscape architecture research and practice.

Koebel, C. T. (1986). "Estimating substandard housing for planning purposes" Journal of Planning Education and Research 5(3): 191.

This paper explores the use of administrative records from tax assessments, combined with the hedonic price technique[i] to estimate a housing quality index This, in turn, is used to estimate substandard housing and established need levels for housing programs Verification of the housing quality index is made by comparing housing units with code violation inspections

Lober, D. J. (1995) "Resolving the siting impasse: modeling social and environmental locational criteria with a geographic information system" Journal of the American Planning Association 61(4): 482-495.

This site suitability study examines the representation of social criteria for locating a recycling center, and demonstrates how traditional overlay approaches to “McHargian”[ii] site suitability analysis can be extended to include these social criteria through the use of a geographic information system. The social criteria, characterized in terms of “closeness” and distance, are examined in relation to siting policy objectives of effectiveness and equity. One social representation is made by transforming a range of the distances between population concentrations and a waste facility into a map of attitudes of opposition towards the facility, using empirical estimates of attitudes. This social representation is combined with environmental criteria to identify solutions that both satisfy environmental concerns and are the best choices according to social criteria of being implementable and feasible, rather than only according to the traditional criterion of maximum efficiency.

Luloff, A. (1999). "The doing of rural community development research" Rural Society 9(1): 313-327.

Rural community development at Pennsylvania State University has been characterized by an interdisciplinary approach for some time. This may reflect the physical location of rural sociologists and rural development, resource, and agricultural economists in the same building. However, integration in the same building and department does not necessarily guarantee interaction. In order for this to happen, common ground has to be established. It has been. These common interests are founded in a shared concern for the quality of life of the people and places of rural Pennsylvania and the United States, and, increasingly internationally. This central focus has apparently been enough to help the university overcome the usual disciplinary barriers, which include different research languages, different choices of levels and units of analysis, and different preferences for sources of data. Indeed, upon reflection, these differences might be a strength, for when facing rural development problems multiple talents are brought to the table. The approach can best be described as multidisciplinary with a decided focus on multiple methods and measurement. Rural community development is far too complex to be adequately captured by the use of only one variable or measure and/or by one method of gathering data.

Koepsell, T. D. , E. H. Wagner, A. C. Cheadle, D. L. Patrick, D. C. Martin, P. H. Diehr, E. B. Perrin, A. R. Kristal, C. H. Allan-Andrilla and L. J. Dey. “Selected Methodological Issues in Evaluating Community-Based Health Promotion and Disease Prevention Programs.” Annual Review of Public Health Vol. 13: 31-57 Volume publication date May 1992

An important trend in health promotion and disease prevention has been the increasing number and scope of community-based interventions. The authors focus on a selection of methodological issues that assume special importance in evaluating community-based programs, but receive little coverage in standard texts on program evaluation.

Thompson, Beti, Gloria Coronado, Shedra A. Snipes, and Klaus Puschel "Methodologic Advances and Ongoing Challenges in Designing Community-Based Health Promotion Programs." Annual Review of Public Health Vol. 24: 315-340 May 2003.

Community intervention trials attract researchers as potential ways to achieve widespread, long-term change in health behaviors. The first generations of community studies were somewhat unsophisticated in design and analysis, and their promise may have been overstated. As design and analysis issues were better defined, as secular trends caught up with the behaviors that researchers were trying to change, or as other unknown variables affected community studies, small effects of interventions were observed in community trials. Discussions were held in professional meetings and reported in the literature: Should community trials be discontinued? In general, the answer was a qualified no. In this paper, the authors briefly review some of the many advances made in community intervention trials, and address in more detail the challenges ahead.

The Public Health & Urban Design Nexus

Boarnet, M. G., M. Greenwald, et al. (2008). "Walking, Urban Design, and Health." Journal of Planning Education and Research **27**(3): 341.

The authors examine the magnitude of health benefits from urban design characteristics that are associated with increased walking. Using geocoded travel diary data from Portland, Oregon, regression analyses give information on the magnitude and statistical significance of the link between urban design variables and two-day walking distances. From the coefficient point estimates, the authors link to the health literature to give information on how many persons would realize health benefits, in the form of reductions in mortality risk, from walking increases associated with urban design changes. Using a cost-benefit analysis framework, they give monetized estimates of the health benefits of various urban design changes. The article closes with suggestions about how the techniques developed can be applied to other cost-benefit analyses of the health benefits of planning projects that are intended to increase walking.

Hynes, H. P., D. Brugge, et al. (2000). "Public Health and the Physical Environment in Boston Public Housing: A Community-based Survey and Action Agenda." Planning Practice and Research 15(1-2): 31-49.

Studies of health and housing in the US and Great Britain have consistently demonstrated associations between poorly maintained housing, contaminated indoor air and ill health. The Public Health in Boston Public Housing project focuses on indoor environmental health in West Broadway Housing in South Boston, one of three housing developments in that neighbourhood and one of 68 public housing developments managed by the Boston Housing Authority (BHA). The overall goal of this project is to develop a model survey and plan of action, based on the principles of successful university–community partnerships, with the aim of public-housing improvement and community environmental-health promotion. Once demonstrated in West Broadway Housing, the model can be adapted to other housing developments.

Jackson, L. E. (2003). "The relationship of urban design to human health and condition" Landscape and urban planning 64(4): 191-200.

This paper acknowledges the same intimate connection between public health and urban design as our proposed juxtaposition between the built environment and heat illness. Furthermore, the paper advocates the inclusion and empowerment of residents in shaping their living environment.

The population of the United States of America is currently experiencing increased illness from dispersed and synergistic causes. Many of the acute insults of the past have receded due to centralized health care and regulatory action. However, chronic ailments including asthma and allergies, animal-transmitted diseases, obesity, diabetes, heart disease, and depression are on the rise. These diverse illnesses join with forest fragmentation, stream degradation, wetlands destruction, and the concomitant loss of native species to suggest detrimental contributions from the built environment. This paper surveys the state of the science on the impacts of urban design on human health and well-being. Drawing primarily on recent peer-reviewed literature in a broad array of health, planning, and environmental fields, it outlines the influence of design at three spatial scales on aspects of physical and mental health, and social and cultural vibrancy. Selected ecological effects are also discussed to illustrate shared associations with urbanization. While causal chains are generally complex and not always completely understood, sufficient evidence exists to reveal urban design as a powerful tool for improving the human condition.

Solutions are discussed at the personal and professional level, emphasizing cross-disciplinary collaboration in urban planning and design, and the participation of residents in shaping their living environment. At the parcel scale, greenery and access to it visually and physically are the principal keys to health. These elements must be incorporated into relatively high-density neighborhood designs that include public buildings, open space, mixed land use, and pedestrian walkways to increase physical exercise and enhance civic life. Finally, neighborhoods must be embedded in existing urban infrastructure to provide larger cultural and business opportunities and reduce reliance on the automobile. Further research is recommended to strengthen the associations between design and health. Increased communication on this subject is also necessary between design and health practitioners and their clients and colleagues.

Spielman, S. E., C. A. Golembeski, et al. (2006). "Interdisciplinary Planning for Healthier Communities: Findings from the Harlem Children's Zone Asthma Initiative." Journal of the American Planning Association 72(1): 100-108.

Health disparities that affect whole communities may involve factors (like housing quality) that lie at least partly within planners' realm of policy influence. This article demonstrates a link between housing and childhood asthma. The magnitude of the childhood asthma epidemic in Harlem in New York City and the commitment of engaged community partners led to an interdisciplinary, participatory, and multifaceted approach to the planning, implementation, and evaluation of the Harlem Children's Zone Asthma Initiative. The authors present the first year's data on environmental triggers in the homes of program participants, showing that intensive, community-based programs can reduce both home environmental triggers and adverse childhood asthma outcomes. This provides an example of a community-wide public health intervention that informs public policy and planning, and may provide a sustainable model for reducing childhood asthma in impoverished communities.

Stokols, D. (1992). "Establishing and maintaining healthy environments: toward a social ecology of health promotion" American Psychologist 47(1): 6.

Stokols' social ecology perspective seems like a useful primer on health promoting environments. He also developed transdisciplinary action research (TDAR) which is a theory that may be useful in the design of the community assessment tool.

Earlier research on health promotion has emphasized behavior change strategies rather than environmentally focused interventions. The advantages of integrating lifestyle modification, injury control, and environmental enhancement strategies of health promotion are substantial. The author offers a social ecological analysis of health promoting environments, emphasizing the transactions between individual or collective behavior and the health resources and constraints that exist in specific environmental settings. Directions for future research on the creation and maintenance of health promoting environments also are examined.

Topics: Migrants, Farmworkers, Heat Illness

Culp, K., S. Tonelli, et al. (2011) "Preventing Heat-Related Illness among Hispanic Farmworkers" Aaohn Journal 59(1): 23-32.

Hispanic and Latino farmworkers are at risk for negative occupational health and safety outcomes due to issues such as their extreme work conditions, their reliance on employer beneficence, and cultural barriers. The purpose of this article is to explain the unique characteristics of heat-related illness in the Hispanic agricultural work force and to provide an overview of the problems of poor hydration and heat exposure in this population. Culturally appropriate preventive strategies are discussed because industrial-type solutions may not work in a crop production environment where language and beliefs may interfere with adoption.

Farquhar, S., J. Samples, et al. (2008) "Promoting the Occupational Health of Indigenous Farmworkers" Journal of Immigrant and Minority Health 10(3): 269-280.

In the United States, approximately 78% of agricultural farmworkers are immigrants. In Oregon, a growing number of these farmworkers are indigenous and speak an indigenous language as their primary language. This group of farmworkers suffers from linguistic, cultural and geographic isolation and faces a unique set of challenges yet little has been done to identify their health needs. Using data from focus groups, partners from this community-based participatory research project examined indigenous farmworkers' concerns regarding occupational injury and illness, experiences of discrimination and disrespect, and language and cultural barriers. The data revealed examples of disrespect and discrimination based on the languages and cultures of indigenous farmworkers, and a lack of basic occupational health and safety information and equipment. For example, participants mentioned that occupational safety information was inaccessible because it was rarely provided in indigenous languages, and participants felt there were no legal means to protect farmworkers from occupational hazards. Community-based strategies designed to address the occupational health status of farmworkers must consider the unique circumstances of those farmworkers who do not speak Spanish or English.

Potter, J. J. (1993). "The impact of change upon rural-urban migrants in Turkey" Landscape and urban planning 26(1-4): 99-114.

The focus of this study is people's perception of their housing. The study took place in Ankara, Turkey, during the 1990- 1991 academic year. The intention was not to test a particular set of hypotheses but to compare and contrast the lives of people who had migrated to squatter settlements in Ankara with those who had remained in rural settings. The key idea in selecting the two communities was to have a pool of interviewees who were reasonably similar with regard to life experience except for the recent migration of the one group. The migrant group selected was living in a well-established squatter settlement which is located about a 10-15 minute minibus ride south of the city center. The sample of non-migrants came from a rural farming community about an hour drive northwest of Ankara. Data were collected utilizing a questionnaire during interviews conducted in the residents' homes. Questions dealt with both objective issues regarding their housing as well as their evaluations of the quality of their housing. The data analysis went through a series of stages, each stage reflecting another way of viewing the information. The results indicate that there is a difference between rural and urban residents' perceptions of their housing. Rural residents are generally more satisfied with their housing than their urban counterparts. It seems that these differences in perceptions are influenced less by gender than by environment. Finally, although there is an objective difference in the quality of housing, the results suggest that subjective evaluations may have a greater impact on satisfaction than objective measures of residential quality.

Steinberg, SL and SJ Steinberg (2008) "People, Place and Health: A Sociospatial Perspective of Agricultural Workers and their Environment."

This paper offers a spatial approach to the risk of pesticide poisoning for farmworker communities, and utilizes GIS to effectively integrate environmental and social data related to farmworker health and pesticide use. Our project also emphasizes the interaction between people and place. A similar GIS analysis might avail a more robust understanding of the relationship between farmworker health and heat illness.

This project employs a mixed-method, place-based approach to study agricultural worker health issues related to pesticide use in rural California. Sociospatial analysis considers space, place and social indicators in a holistic and integrated fashion (Steinberg and Steinberg 2008). This project utilizes Geographic Information System (GIS) to effectively integrate environmental and social data related to farmworker health and pesticide use. The value of a sociospatial approach is that it allows for the spatial portrayal of social and environmental data in a holistic fashion. In this case, the sociospatial approach highlights the interplay between people and place. The authors focus on environmental and social issues for farmworkers in three communities in Monterey and Tulare Counties. Using this visual approach for communication and portrayal of data proves to be effective across both language and literacy barriers. This report contains sociospatial data, consisting of both maps and interview data integrated to tell the stories of farmworkers, their communities and pesticide drift. The project also incorporated extensive environmental mapping of pesticide use and application rates within the study region with associated qualitative data relating to farmworker health. The complete map set along with details regarding spatial analysis methods and data are detailed in a separate document, "People, Place and Health: A Pesticide Atlas of Monterey County and Tulare County, California." Methods used include key informant interviews, ethnographic methods, public participation GIS, attending community meetings, and environmental mapping. The work highlights how a community based participatory research approach is a means to understand community members' interests and knowledge about pesticides. Particular emphasis is placed on the amount and types of pesticides and fumigants used near schools, neighborhoods and community gathering places. The report concludes with a summary of findings and policy recommendations.

Vitiello, D. (2009). "The Migrant Metropolis and American Planning" Journal of the American Planning Association 75(2): 245-255.

Immigration poses various problems for U.S. cities and regions, and the roles planners should play in migrant communities are not clear. Practitioners and scholars have addressed the planning challenges and opportunities presented by the major migrations of ethnic minorities to U.S. cities and regions over the past century. The paper traces discussions of planning and migration at professional planning conferences over the past century and survey planning scholarship and practice related to immigration and migrant communities during three principal eras: early 20th century southern and eastern European immigration; the mid-century internal migrations of African Americans and Puerto Ricans; and immigration in the late 20th and early 21st century. Over the past century, immigration has had physical, economic, and social effects on people and places that are legitimate concerns of urban planners. Yet, the planning profession has had an ambiguous and often ambivalent relationship with migrant communities and has struggled to define specific roles for planners within those communities while social workers and other community and economic development practitioners played larger roles. Planning scholars have not paid as much attention to migrants' adaptation and mobility in U.S. society or their impacts on receiving communities, labor markets, housing, and congestion as have other scholars and urbanists. Planners have engaged with migrants in a variety of ways. Understanding this history provides context for contemporary debates about immigration and helps frame challenges and opportunities in migrant and receiving communities as planning problems.

Post Occupancy Evaluation

Francis, M. (1987) "Some different meanings attached to a city park and community gardens." Landscape Journal 6(2): 101.

How do people use and value urban open spaces such us city parks and community gardens? Are the values attached to open spaces by different groups such as users and non-users similar or different? Do officials charged with managing urban recreation have the same perceptions of the benefits of open spaces as do city residents who use or pass by them? These questions formed the basis of a comparative study of an adjacent city park and community gardens in Sacramento during 1982-85. The study compares the attitudes of users, non-users, and government officials toward a public park and user-managed community gardens. The historical development, planning and design process, management and maintenance, governmental perceptions, site use, and user and non-user attitudes associated with each site are compared. The different meanings attached by users, non-users, and government officials to both sites are contrasted. In conclusion, a conceptual framework for understanding the social context of parks versus gardens in cities is presented.

Francis, M. (2002) "Village homes: a case study in community design." Landscape Journal 21(1): 23.

This case study follows a format developed for the Landscape Architecture Foundation (Francis 1999a, 2001a). This is one of three prototype case studies being developed for LAF's Land and Community Design Case Study Initiative (Francis 2001b, c; Francis 2002). It is intended as a prototype place-based case study that will aid others in developing cases of natural and built landscapes.

Humphreys, M. A. (2005). "Quantifying occupant comfort: are combined indices of the indoor environment practicable?" Building Research and Information 33(4): 317-325.

What are the various ways in which evaluation of the several aspects of the indoor environment might combine to form an occupant's overall assessment of that environment? Data from an environmental survey of 26 offices in Europe (the Smart Controls and Thermal Comfort, or SCATs, project) are used. These show that dissatisfaction with one or more aspects of the indoor environment does not necessarily produce dissatisfaction with the environment overall. Conversely, satisfaction with one or more environmental aspect does not necessarily produce satisfaction with the total environment. Building occupants balance the good features against the bad to reach their overall assessment. Not all aspects are equally important in this subjective averaging process. Satisfaction with warmth and air quality is more important than satisfaction with the level of lighting or humidity. The relative importance of the various aspects differed from country to country, making it impossible to develop an internationally valid index to rate office environments by means of a single number. The best linear index constructed from the data failed to rank the indoor environments of the buildings in the correct order, as defined by the occupants' overall assessments. It is therefore wise to assess each of the several aspects separately rather than rely only on a combined index.

Marmot, A. F. (1983) "Flats fit for families: an evaluation of post-occupancy evaluation." Design Studies 4(2): 92-99.

POE (post-occupancy evaluation) of flats, especially high rise flats, has frequently found them to be unsuitable for families with children. This paper critically analyses those findings and their role in shifting UK housing away from high flats. It is argued that POE has produced some equivocal results, due to methodological and theoretical difficulties. It is further argued that POE of high flats has been almost ignored by designers and played little part in the policy process by which high flats were abandoned. The paper concludes by outlining an enriched form of using POE together with other evaluation methods.

Moraes, O. B. and A. K. Abiko (2008) "Dweller perception using fuzzy logic for slum upgrading" Proceedings of the Institution of Civil Engineers-Municipal Engineer 161(3): 151-161.

A large number of initiatives in cities in Brazil - including slum clearance and upgrading - have been undertaken over the years in an effort to ameliorate the problems arising from informal occupation; unfortunately, however, little is known about the related performance outcomes. Careful appraisal of the results of such initiatives is thus called for, covering evaluations of dwellers' perceptions of the upgraded environments. Among the available evaluation methods, post-occupancy evaluation (POE) is commonly employed, although it fails adequately to reflect prevailing subjective concepts of quality. The present paper contains the partial findings of a research exercise aimed at developing an original method, using fuzzy logic, for urban environmental quality evaluation in informally occupied areas on the basis of combining quantitative indicators and dweller perception. It combines POE with fuzzy logic in order to develop tools that can better model the uncertain information that emerges from that kind of study. This paper aims to introduce an uncertainty measure used in order to identify the strengths and weaknesses of slum upgrading projects. The results show that it is possible to quantify certainty degrees in the findings and to define if additional information is needed.

Nicol, F. and S. Roaf (2005) "Post-occupancy evaluation and field studies of thermal comfort" Building Research and Information 33(4): 338-346.

The similarities and differences are explored in both the aims and the methods between post-occupancy evaluations and field studies of thermal comfort in buildings. The interpretations of the field study results are explored, especially the ways the results differ from laboratory experiments. Particular attention is drawn to the dynamic nature of the interaction between buildings and their occupants. Answers to questions of the type used in post-occupancy evaluations are compared with results from field studies of thermal comfort, and the implications of these findings for the evaluation of buildings and the conduct of post-occupancy evaluation are explored. Field studies of thermal comfort have shown that the way in which occupants evaluate the indoor thermal environment is context-dependent and varies with time. In using occupants as part of the means of measuring buildings, post-occupancy evaluations should be understood as reflecting the changing nature of the relationship between people, the climate and buildings. Surveys are therefore measuring a moving target, and close comparisons based on such surveys need to take this in to account.

Owens, P. E. (2002). "No teens allowed: The exclusion of adolescents from public spaces." Landscape Journal 21(1): 156.

The dynamics and expression of exclusion in the built environment may be a significant risk factor for migrant farmworker heat illness.

The current practice of excluding adolescents from public landscapes is explored through a review of public policies and common design practices that restrict their use of places. Policies reviewed include curfew and skateboarding ordinances. Design practices related to four types of environments—commercial areas, parks, neighborhoods, and schools—are discussed. The policies define when and where teens cannot get together and design practices often do not provide an alternative. For example, clients' request that designs not encourage teens to hang out and common design practices suggest spacing benches evenly along walkways rather than clustering them together so a group of teens can sit. Recommendations on how the needs of adolescents can be addressed through design are discussed. Suggestions include designing adolescent-friendly places, incorporation of youth activities with other age groups, and strategies for youth design participation.

Preiser, W. F. E. (2002). "The evolution of post-occupancy evaluation: Toward building performance and universal design evaluation" Learning from Our Buildings: A State-of-the-Practice Summary of Post-Occupancy Evaluation: 9-22.

The purpose of this chapter is to define and provide a rationale for the existence of building performance evaluation. Its history and evolution from post-occupancy valuation over the past

30 years is highlighted. Major methods used in performance evaluations are presented and the estimated cost and benefits described. Training, opportunities and approaches for building performance evaluation are enumerated. Possible opportunities for government involvement in building performance evaluation are sketched out. The next step and new paradigm of universal design evaluation is outlined. Last but not least, questions and issues regarding the future of building performance evaluation are raised. The process of POE differs from these and technical evaluations in several ways:

Preiser, W. F. E. and J. Vischer (2005) <u>Assessing building performance</u>, Butterworth-Heinemann

The building performance evaluation (BPE) framework emphasizes an evaluative stance throughout the six phases of the building delivery and life cycle: (1) strategic planning/needs analysis; (2) program review; (3) design review; (4) post-construction evaluation/review; (5) post-occupancy evaluation; and, (6) facilities management review/adaptive reuse. The lessons learned from positive and negative building performance are fed into future building delivery cycles. The case studies illustrate how this basic methodology has been adapted to a range of cultural contexts, and indicate the positive results of building performance assessment in a wide range of situations.

Preiser, W.F.E and Jack L. Nasar (2008) "Assessing Building Performance: Its Evolution from Post-Occupancy Evaluation," IJAR, vol 2 issue 1.

This article chronicles the evolution of the field of post-occupancy evaluation and visual quality (aesthetic) programming and evaluation from their origins in the 1960s, and describes their transformation into current developments in systematic building performance and visual quality assessments. Major components of post-occupancy evaluations are highlighted, and examples of outcomes presented. This consumer-oriented approach is part of a new democratic paradigm embodying autonomy, self-organization, ecology, sustainability, adaptation, and continuous improvement. Methods range from qualitative self-reports of likes and dislikes to quantitative multivariate analyses, from verbal scales to observations of use, and last but not least, expert judgments. The paper discusses questions about the future of this field, its viability, cost-effectiveness, and benefits for all stakeholders. It concludes with the examination of a recent project, reported in the book Designing for Designers that used distributed technology to systematically evaluate the performance of 17 contemporary architecture school buildings from around the world. The approach is discussed, as well as methods, lessons learned, and ways in which the methodology and findings apply to other kinds of facilities and future developments in the field.

Sherman, S. A., J. W. Varni, et al. (2005). "Post-occupancy evaluation of healing gardens in a pediatric cancer center." <u>Landscape and urban planning</u> 73(2-3): 167-183.

This study evaluates three healing gardens surrounding a pediatric cancer center. All gardens contained seating, flowers and plants, but varied in size, features, and in user groups' access to them. A post-occupancy evaluation (POE) yielded a dataset of 1400 garden-users for whom demographic information, activities, and length-of-stay were recorded. Results indicate differential usage patterns across gardens, user category (patient, visitor, or staff), and age (adults and children). The largest garden with most direct patient access was the most used. Staff mostly used the gardens to walk-through or to sit and eat, rarely interacting with features intended for active engagement. Despite patient and child-friendly designs, the overwhelming majority of visitors were adults who mostly engaged in sedentary activities. Children who did use the gardens interacted with garden features significantly more than adults. Although patient rooms are situated at ground-level around the gardens to promote window views of the gardens, the findings suggest an inverse relationship between patient window use and the number of people in the gardens. Finally, preliminary data suggest that emotional distress and pain are lower for all groups when in the gardens than when inside the hospital. Provisional design implications of these findings are discussed.

Vischer, J. C. (2008). "Towards a user-centered theory of the built environment" <u>Building Research & Information</u> 36(3): 231-240.

The building user's experience is explored as the basis for constructing a theory of the built environment. The first postulate of a user-centered theory is that the built environment exists to support the activities of users that it shelters. This theory, therefore, indicates ways in which we might learn more about this complex relationship; it also provides tools for measuring the degree to which the built environment in use is successful. Ways of approaching the users' experience of built space, and ways of measuring it to ensure that knowledge of the user-environment relationship grows, are described. Challenges to implementing such an exploration include defining users, agreeing on the meaning of experience, and organising if not delimiting what is included in the notion of built environment. The temporal dimension of space use is also a consideration. Drawing on extensive research on space-use in office buildings, a viable user-centered theory is developed in the context of one type of built environment. The user-centered theory enables links to be made between knowledge accumulated both at the micro scale of the users' experience and at the macro perspective of how the built environment is produced and delivered.

Vischer, J. C. (2009). "Applying Knowledge on Building Performance: from evidence to intelligence" <u>Intelligent Buildings International</u> 1(4): 239-248.

The article examines the meaning of intelligence—or knowledge—in the context of building design and construction. The user perspective is invoked to help us understand how an intelligently designed building is expected to function better for users. The article examines how intelligence about use and users is acquired by researchers, transmitted to practitioners and then applied as knowledge to the design decision-making process. The more traditional post-occupancy evaluation approach to acquiring feedback from users about building performance is reviewed and compared with the newer approach known as evidence-based design. The results of these two traditions are examined in view of their effects on healthcare design as well as on office building design and use. The article argues that information derived from feedback collected systematically from building users is accumulating and now forms a knowledge base from which design and construction decisions are increasingly being made. As practitioners acquire this knowledge, it becomes an additional tool they can - and do - use to apply to the intelligent creation of the built environment.

Zimring, C. M. and J. E. Reizenstein (1980) "Post-occupancy evaluation" <u>Environment and Behavior</u> 12(4): 429.

Post-occupancy evaluation (POE) is defined as examination of the effectiveness for human users of occupied, designed environments. POEs generally focus on a single type of designed setting, tend to describe rather than manipulate, and are usually aimed at application. Within this wide focus, POEs vary considerably, and three conceptual dimensions-generality, breadth of focus, and applicability are useful in cataloguing them. These dimensions are described and their implications for POE sponsorship and methods are discussed. Suggestions are proposed for future developments of the field.

Design of Community Assessment Tools

Barzyk, T. M., K. C. Conlon, et al. (2010). "Tools available to communities for conducting cumulative exposure and risk assessments" Journal of Exposure Science and Environmental Epidemiology 20(4): 371-384.

This paper summarizes and assesses over 70 tools that could aid with gathering information and taking action on environmental issues related to community-based cumulative risk assessments (CBCRA). Information on tool use, development and research needs, was gathered from websites, documents, and CBCRA program participants and researchers, including 25 project officers who work directly with community groups. The tools were assessed on the basis of information provided by project officers, community members, CBCRA researchers, and by case study applications. Tables summarize key environmental issues and tool features:
(1) a listing of CBCRA-related environmental issues of concern to communities;
(2) web-based tools that map environmental information;
(3) step-by-step guidance documents;
(4) databases of environmental information; and
(5) computer models that simulate human exposure to chemical stressors.
All tools described here are publicly available, with the focus being on tools developed by the US Environmental Protection Agency. These tables provide sources of information to promote risk identification and prioritization beyond risk perception approaches, and could be used by CBCRA participants and researchers. The purpose of this overview is twofold: (1) To present a comprehensive, though not exhaustive, summary of numerous tools that could aid with performing CBCRAs; and (2) To use this toolset as a sample of the current state of CBCRA tools to critically examine their utility and guide research for the development of new and improved tools.

Bowns, C. (2011). "Advancing Transdisciplinary Action Research in Rural Pennsylvania" Landscape Journal 30(1): 88.

The current academic discourse around interdisciplinary scholarship and dissemination has major implications for plural design, a prominent area of academic engagement in landscape architecture. The engagement of citizens in dialogues on public policy indicates increasing consensus that plural design must be embedded in larger, interdisciplinary systems that will advance the work of creating public policy. This paper participates in an inquiry of Stokols's Transdisciplinary Action Research (TDAR) (2006) methodology and its potential to extend current theoretical and methodological limits in plural design research. Aligning with others, the author argues the importance of a structuring framework for plural design research and queries the philosophical and ethical changes necessary to advance environmental and community-based knowledge into higher levels of interdisciplinary discourse. The first or "theory" section juxtaposes plural design in academia with Stokols (2006) and other interpretations of transdisciplinary research. The second section uses the TDAR model to frame plural design research in three Susquehanna River towns in Pennsylvania. The discussion and conclusion speculate on the methodology's specific applicability to the case study research and the value of TDAR for university plural design practice in general.

Carsjens, GJ and A Ligtenberg (2007) "A GIS-based support tool for sustainable spatial planning in metropolitan areas" Landscape and urban planning 80(1-2): 72-83.

This paper describes a support tool that incorporates environmental aspects in local spatial planning processes. The tool aims to support the work of local authorities and urban planning offices, especially with regard to identifying options in the early phases of the planning process. The tool has been developed and implemented in a Geographical Information System (GIS) and evaluated for a case study in Nijmegen, the Netherlands. The results show the importance of communicative aspects for these kinds of tools, especially for tools that aim to stimulate several disciplines in working together. The results also show that geo-information tools can easily become too complex, and turn out to be 'black boxes' for participants in the planning process. Therefore, it is important to keep these tools as simple as possible, and to make clear how the results of the planning process will benefit from their use.

Cheadle, Allen; Wagner, Edward; Koepsell, Thomas; Kristal, Alan; et al. "Environmental indicators: A tool for evaluating community-based health-promotion programs." American Journal of Preventive Medicine, Vol 8(6), Nov-Dec 1992, 345-350.

Proposes using a class of community-level measures (environmental indicators (EIs]) as part of the evaluation of community-based health-promotion programs. Community-level measures of health-related behavior can be divided into 3 conceptual categories. The 1st 2 categories comprise statistical aggregates of measurements made on individuals, while the 3rd category, EIs, is derived from observations of the community environment. EIs measure aspects of the physical, legal, social, and economic environment in a community that reflect, and likely influence, the attitudes and behavior of individual community members. They also measure an important intermediate step in community-based health-promotion interventions, namely environmental factors that programs target to modify individual attitudes and behavior. Examples are presented of EIs for tobacco use and diet.

Clifton, K. J., A. D. Livi Smith, et al. (2007). "The development and testing of an audit for the pedestrian environment" Landscape and urban planning 80(1-2): 95-110.

In recognition of the need for consistent, reliable, and efficient methods to collect information about the walking environment, the authors have developed and tested a complete environmental audit methodology, the Pedestrian Environmental Data Scan (PEDS). In this paper, the development of the audit methodology is presented, including the design of the instrument, the creation of training and supporting materials, administration, and integration with handheld technology. Various tests of inter- and intra-rater reliability of the instrument have been conducted, including individual audit measures and various approaches to administering the audit. The results indicate high reliability for most measures and confirmed administration procedures. The PEDS audit methodology provides a comprehensive method to evaluate pedestrian environments for academics involved with transportation and physical activity research as well as practitioners seeking to an assessment tool for prioritizing investments.

Flax, LK, RW Jackson, et al. (2002) "Community vulnerability assessment tool methodology" Natural Hazards Review 3: 163.

Communities must identify exposure to hazard impacts to proactively address emergency response, disaster recovery, and hazard mitigation, and incorporate sustainable development practices into comprehensive planning. Hazard mitigation, an important part of sustainable development, eliminates or minimizes disaster-related damages and empowers communities to respond to and recover more quickly from disasters. The Community Vulnerability Assessment Tool (CVAT) is a risk and vulnerability assessment methodology designed by the National Oceanic and Atmospheric Administration's Coastal Services Center to assist emergency managers and planners in their efforts to reduce hazard vulnerabilities through hazard mitigation, comprehensive land-use, and development planning. CVAT analysis results provide a baseline to prioritize mitigation measures and to evaluate the effectiveness of those measures over time. This methodology is flexible, as results may be achieved using a geographic information system or static maps with overlays and handwritten data. This paper outlines how to engage stakeholders and explains the CVAT process. Several case studies also highlight some of the challenges/problems and best practices/opportunities associated with applying the CVAT methodology.

Jones, P., J. Patterson, et al. (2007). "Modeling the built environment at an urban scale—Energy and health impacts in relation to housing." Landscape and urban planning 83(1): 39-49.

In order to develop the concept of sustainability in the built environment there must be increased use of detailed predictive tools, both at an individual building level and at urban scale. A number of tools exist for predicting the energy and environmental performance at an individual building level. However, there are few tools available to predict performance at an urban scale. This paper describes the Energy and Environment Prediction (EEP) tool which was developed to model existing urban scale built environments, incorporating building energy use, traffic flow and health.

Paquet, C., M. Cargo, et al. (2010). "Reliability of an instrument for direct observation of urban neighbourhoods" Landscape and urban planning 97(3): 194-201.

There is an increasing interest in evaluating physical and social characteristics of deprived and wealthy neighborhoods to explain social health disparities. Direct observations enable obtaining a comprehensive and objective representation of such characteristics. The quality of this representation rests on the use of a reliable and valid observation tool. This study reports measurement properties of an instrument that was developed to directly observe structural and contextual environmental characteristics of urban neighborhoods with respect to urban form (e.g., street safety elements, parking), negative attributes (e.g., rubbish, crumbling masonry, graffiti), and positive attributes (e.g., maintained dwellings, sitting benches). Two trained evaluators rated the condition of streets, public spaces, dwelling units and the presence/absence of specific characteristics of 250 street blocks within 30 socio-economically diverse census tracts of the Montreal Metropolitan Census Area in 2003. Inter- and intra-rater reliability was assessed using kappa and internal consistency was ascertained using Cronbach's alpha. Inter- and intra-rater reliability was excellent (>0.80) for items pertaining to urban form, and substantial (>0.60) for domains pertaining to positive and negative characteristics. Internal consistency was acceptable (>0.70) for urban form and negative characteristics, but not for positive characteristics. This study demonstrates the psychometric properties of an instrument designed to measure positive, negative, and urban form characteristics which has utility for examining various environmental effects on many aspects of health in a wide range of research contexts.

Passon, C., D. Levi, et al. (2008). "Implications of Adolescents' Perceptions and Values for Planning and Design" Journal of Planning Education and Research 28(1): 73.

Adults are responsible for selecting and creating the environments where their children and youth live, but it is not clear if these places contain the qualities that young people value. In this study, high school students from three communities were surveyed regarding their perceptions of where they live to determine whether indicators identified by previous research as qualities that youth value are present in those communities and perceived to be important. Although the results suggest the indicators are important to the adolescents, their communities lack a majority of them and this has contributed to low satisfaction ratings. Recommendations for better integrating adolescents into public participation processes are discussed along with implications for planning and design.

Pothukuchi, K. (2004). "Community Food Assessment" Journal of Planning Education and Research 23(4): 356.

Community food assessments (CFAs) constitute a first step in planning for community food security. Community food security is a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that also maximizes community self-reliance and social justice. Through a study of nine CFAs, this article discusses their common threads to planning, how a planning approach might strengthen CFAs, and what planners might learn from them. Four CFAs led by professionals with planning backgrounds employed spatial mapping techniques to analyze a variety of issues, explored more and diverse community-food linkages, used multiple sources and methods, envisioned a key role for community planning agencies, distributed their findings widely to a local and national audience of professional planners, and helped place planners in leadership positions of the national community food security movement. Implications of this study for planning education, research, and practice are discussed.

Pothukuchi, K. (2005). "Building community infrastructure for healthy communities: Evaluating action research components of an urban health research programme" Planning Practice & Research 20(2): 127-146.

The action research process described in this paper bears general comparison to our project and, more specifically, may inform our design of the community assessment tool. The paper suggests a concern for and criteria by which to validate the process. The paper also reflects directly upon the challenges which face university led public interest projects.

This paper documents an action research process begun and implemented by an interdisciplinary team of health and community development professionals, including academics and practitioners. The research programme had, among its objectives, building community capacity in urban health programming. The extent to which the programme was successful in applying action research principles in programme planning and implementation is assessed in this paper. Our experiences suggest that the challenges inherent in action research programmes led by university researchers need special efforts and institutional support in order to be overcome.

Low-income communities experience higher rates of health problems and related mortality than their wealthier counterparts. This is especially true of inner city communities that are also highly segregated by race, ethnicity and income. Recently, public health researchers have called attention to issues related to community infrastructure, economic development, social capital and the development of policies to facilitate general individual and household well-being and health.

Sawicki, D. S. and W. J. Craig (1996) "The Democratization of Data: Bridging the Gap for Community Groups." Journal of the American Planning Association 62(4): 512-523.

Community groups from low-income neighborhoods have the most to gain from full access to data, yet the least capability to achieve that access or make use of the data once they have it. The gap is being filled by intermediaries providing access to data and assistance with analysis and policy development. These efforts are empowering community groups, allowing them to participate fully in planning and policy discussions that affect their neighborhoods. This paper explores the nature of the information providers, the services they provide to community organizations, and the challenges they face in doing so. Combining their experiences with a view of the coming technical and societal issues allows the researchers to forecast what the future might look like. They conclude that community groups will become more self-sufficient, but will continue to need outside expertise. Since not all community groups now have access to such intermediaries, more research and development should be undertaken to support the movement.

South, J., P. Fairfax, et al. (2005). "Developing an assessment tool for evaluating community involvement" Health Expectations 8(1): 64-73.

Current UK policy has resulted in greater requirements for public and patient participation in health service planning and decision making. Organizations and services need to be able to monitor and evaluate the effectiveness and quality of their community involvement processes, but there are few appropriate evaluation tools or sets of indicators available. This paper reports on work within Bradford Health Action Zone to develop a self-assessment tool for organizations on community involvement.
Methods: A multi-agency working group developed the tool. A literature search was undertaken and evaluation resources were reviewed. A set of benchmarks for community involvement in regeneration was utilized in developing the assessment areas. A range of individuals with expertise in community involvement practice and performance management was consulted. The tool was then piloted in two primary care trusts prior to final modifications.
Results: The process resulted in the production of Well Connected - a self-assessment tool on community involvement designed for organizations to assess their progress and identify areas for improvement. A scoring system assesses evidence of a strategic approach to community involvement, good practice throughout the organization, and a range of opportunities and support. Feedback from the pilots revealed that the tool had facilitated assessment of the strengths and weaknesses of organizational practices. The paper discusses some of the methodological challenges pertaining to the measurement of community involvement. Notwithstanding those challenges, it is argued that Well Connected provides a robust and practical framework that health organizations and their partners can use to assess practice.

Stokols, D. (2006). "Toward a science of transdisciplinary action research" American Journal of Community Psychology 38(1): 63-77.

Transdisciplinary action research may provide a useful framework for the design of our community assessment tool.

This paper offers a conceptual framework for establishing a science of transdisciplinary action research. Lewin's (1951) concept of action research highlights the scientific and societal value of translating psychological research into community problem-solving strategies. Implicit in Lewin's formulation is the importance of achieving effective collaboration among behavioral researchers, community members and policy makers. The present analysis builds on Lewin's analysis by outlining programmatic directions for the scientific study of transdisciplinary research and community action. Three types of collaboration, and the contextual circumstances that facilitate or hinder them, are examined:
(1) collaboration among scholars representing different disciplines;
(2) collaboration among researchers from multiple fields and community practitioners representing diverse professional and lay perspectives; and
(3) collaboration among community organizations across local, state, national, and international levels.
In the present analysis, transdisciplinary action research is viewed as a topic of scientific study in its own right to achieve a more complete understanding of prior collaborations and to identify strategies for refining and sustaining future collaborations (and their intended outcomes) among researchers, community members and organizations.

Stokols, D. (2011). "Transdisciplinary Action Research in Landscape Architecture and Planning: Prospects and Challenges." Landscape Journal: design, planning, and management of the land 30(1): 1-5.

A fundamental goal of scholarship in the field of landscape architecture is to enhance the practice of designing, planning, and managing the land (Neckar and Pitt 2010). Owing to the inherently multifunctional nature of landscapes (encompassing both natural or ecocentric, and cultural or anthropocentric dimensions), many scholars have stressed the importance of developing a strong cross-disciplinary approach to landscape research and practice—one that moves the field from multidisciplinary studies of the biological, physical, social, and cultural elements of landscape (which often proceed in parallel yet isolated fashion), toward interdisciplinary and transdisciplinary research programs that explicitly integrate the diverse perspectives of multiple fields and facilitate the translation of research findings into practical guidelines for effective landscape design and management.

Yousefian, A., E. Hennessy, et al. (2010) "Development of the rural active living assessment tools: Measuring rural environments." Preventive Medicine 50: S86-S92.

Objective: Develop rural-specific assessment tools to be used by researchers and practitioners to measure the activity-friendliness of rural communities. **Method:** The tools were created through a mixed-methods investigation into the determinants of physical activity among rural populations. This informed the development of a conceptual framework defining activity-friendly rural environments. Questions were generated to reflect applicable existing urban-based variables and rural conceptual model elements. Pilot testing was conducted in seven rural US communities during the fall of 2008. Inter-rater reliability was assessed. **Results:** The Rural

Active Living Assessment (RALA) Tools include three components: Town-Wide (18 town characteristic questions, and inventory of 15 recreational amenities), Program and Policy (20 questions), and Street Segment (28 questions). We found that the Town-wide and Program and Policy tools were feasible for community members to implement. The observed agreement and K statistic across all items for the Street Segment Assessment were substantial (91.9% and 0.78, respectively). **Conclusions:** The RALA Tools were shown to be feasible and reliability was supported. They assess features believed to be supportive of active living in rural environments; offer users a resource to assess rural environments for activity-friendliness, and also may inform the design of interventions to help rural communities become more active and healthy.

REGIONAL RESOURCES

County of Fresno, (2007). "Heat Emergency Contingency Plan."

This plan describes county operations during heat related emergencies and provides guidance for County departments and personnel. It recognizes the need to communicate and coordinate with local agencies, mobilize and initiate actions in advance of local requests, and supports local actions according to the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).
Plan Goal: To reduce the incidence of morbidity and mortality associated with local extreme heat events.
Heat Plan Activation: Fresno County begins to experience hot weather in May or June of each year and this heat continues throughout the summer months. To ensure the safety of vulnerable segments of the population this plan provides a two phase approach to mitigate and reduce the effects of heat that exceed what is considered normal for the geographic locale.

Kern County Fire Department online information about severe weather

In addition to an online page explaining what to do in an extreme heat emergency, the county has also developed the KERN COUNTY EMERGENCY ALERT PROGRAM.
Kern County has implemented ReadyKern, a state-of-the-art emergency notification system to alert residents and businesses about natural disasters and other crises. The new emergency notification system enables Kern County to provide essential information quickly in a variety of situations, such as earthquakes, severe weather, fires, floods, or evacuation of buildings or neighborhoods.

The process begins when Kern County issues a message about a potential safety hazard or concern. Messages will be sent to all standard voice and text communication devices, including land line phones, cell phones, e-mail, and more. If you don't confirm receipt of the message, the system will try to reach your second contact number or email. The system will continue trying to contact you until it receives a confirmation from you.

To receive important communications from Kern County, residents and business owners must register the voice and text communication devices where they wish to receive messages.

Kings County Department of Public Health. (2008) "Extreme Heat Emergency Plan."

Goals:

- Develop a plan which will assist in anticipating heat emergencies

- Educate the public about the dangers of heat emergencies
- Educate the public about what to do in the event of a heat emergency

This document provides a detailed plan in case of extreme heat with information on cooling centers in a number of communities throughout the county. In addition, there are educational materials provided in both English and Spanish for printing.

San Joaquin County Office of Emergency Services. (May 2008) "Annex H- Public Health, Appendix 11 – Extreme Temperature, Attachment 1 - Extreme Heat."

This document addresses the requirement to establish policies and procedures to follow in the event of extreme heat conditions that may affect San Joaquin County. Such heat conditions were exemplified by a prolonged heat wave in California in July of 2006. This heat wave was particularly devastating in the Sacramento and San Joaquin Valleys. Temperatures well over 100°F are not at all unusual for this County and are not considered emergency conditions. However, the combination of high temperatures with high humidity for a prolonged period of time was devastating. For the first time ever, the National Weather Service's Sacramento Bureau issued a heat advisory.

Numerous temperature records were broken in San Joaquin County:

- The all-time high temperature at the Stockton airport was recorded (July 25th 115°F).
- The all-time high minimum temperature record was broken on July 22nd (80°F),
- And, then broken again on July 23rd (82°F);
- And, on 6 days the record high for the day was tied or broken2.
- Temperatures were well above 100°F for 11 days straight and there was minimal cooling at night caused by abnormally high humidity levels for the area.

Tulare County Office of Emergency Services. (2011) "Tulare County Disaster Preparedness Guide."

This guide is available in English and Spanish. It outlines AlertTC which is Tulare County's public mass notification system designed to keep those who live or work in Tulare County informed of important information during emergency events. The system is sponsored and led by the County of Tulare, in partnership with all Tulare County cities. In addition, the guide has one-page descriptions of what to do in various kinds of disasters, including extreme heat.

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[i] The basic premise of the hedonic pricing method is that the price of a marketed good is related to its characteristics, or the services it provides. For example, the price of a car reflects the characteristics of that car—transportation, comfort, style, luxury, fuel economy, etc. Therefore, we can value the individual characteristics of a car or other good by looking at how the price people are willing to pay for it changes when the characteristics change. The hedonic pricing method is most often used to value environmental amenities that affect the price of residential properties.

[ii] This approach determines regional planning through physiography.