Learning Outdoors through Action and Reflection

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Local environment + livelihoods/life based education.
(also known as PCBE, ie Place/Location based Education that engages learners with local natural and cultural environment. PCBE is based on / reflective of and oriented/to relevant to local way of life and means of generating livelihoods.)

PCBE focuses primarily on land + water resources, biodiversity, ecosystems within a micro-watershed / bio-region on one hand; and cultural history; or tools and techniques used by local communities/groups to manage these bio-physical resources, on the other as the context of teaching + learning. PCBE is a holistic and multi-disciplinary process and pays attention to various management structures and social arrangements to facilitate the exchange / sharing of knowledge, skills, technology, resources etc.

PCBE is an amalgamation / combination of principles developed under various approaches. Prominent among these are: 'Environment Education', 'Eco literacy', Community Based Education, Socially Useful Productive Work based Education, Problem Solving and lateral thinking based education and Participatory Learning Action / Planning, Education for Sustainable Development etc.

Factors that distinguish it is in being locality based, activity / project based - where learners decide the width + depth of questions to be explored + therefore often unfold / explorative.

Boxes 1 & 2

Box 1 : Bio-Diversity

Biodiversity is the diversity of species - sub sp /a variety, family /genus and ecosystems / niches they occupy roles they perform.

These are looked at with reference to a particular region often defined by soil & terrain as well as climate (particularly the range and distribution of rainfall and temperature. which in turn is often dependent on altitude as well as latitude of a location)

Box 2 : Ecosystem

Ecosystem is any location, within a defined boundary. We study the population of all living organisms and group them as 'Producers', 'Consumers' or 'decomposers' and look at their relationship to each other as well as to the non living component of their habitat / place of living. Life cycles, Cycling of matter and transformation from one form to other as well as flow of energy in and out of the system are given particular attention. Rice Farm / Wetlands, Home or School gardens / Irrigated drylands, Slash & burn agriculture / upland farms are some examples of man-made or agro-ecosystems. forests, rivers & streams, grasslands / scrublands are some examples of Natural ecosystems.

(Key Pg 1)

Learning hands-on to plant a tree

PCBE is mainly different because of its assum Page 2
ption of how people learn? Fig A gives a brief outline
of the 4 steps and 4 sets of activities/processes involved.
Details of this enquiry based learning approach:
Step 1 Starting point is a discussion among learners
listing what they already know about a broad or narrow
topic or sub topics [Soil Fertility for instance is a broad
topic, Compost or green manure are narrow topics, whereas
making vermicompost or Vermiwash a sub-topic]
Quite often a visit outdoors to a forest, sacred grove,
pond, lake or river, a farm or food processing unit may
need to be organised to generate questions and define
potential sources of information. What they would like
to know / find out (WHAT, WHERE, FROM WHOM?) is listed.

Step 2 Learners often form small sub groups and venture
Outdoor to collect information. Own observations are
recorded and semi structured interviews are organised to
speak to affected people/stakeholders and local experts/resource
persons. Secondary data is found from newspapers, books, maps etc
Step 3 The findings are presented and discussed. Tabu
lation is done, averages & deviations are worked out, trends
and patterns/cycles etc are identified, Similarities and
differences are listed, often map overlays used to explore
connections. Cause & Effect diagrams, Paired or Priority
rankings are done to find out preferred solutions, resource
use conflicts are identified. All this analysis & Synthesis
leads to hypothesis (theory of what is likely to happen if?)
Teacher / Facilitator encourage by asking open ended questions

Children on an outdoor trip

Step 4 : experiment / field trial is set up to collect reliable evidence to prove or disprove an assumption (eg. subsoil irrigation reduces the irrigation water requirement or vermi-compost is a much better supplier of plant nutrient than farm yard manure or pre-sowing treatment of rice seeds in a 15% solution of cow urine leads to much better germination ratio!)

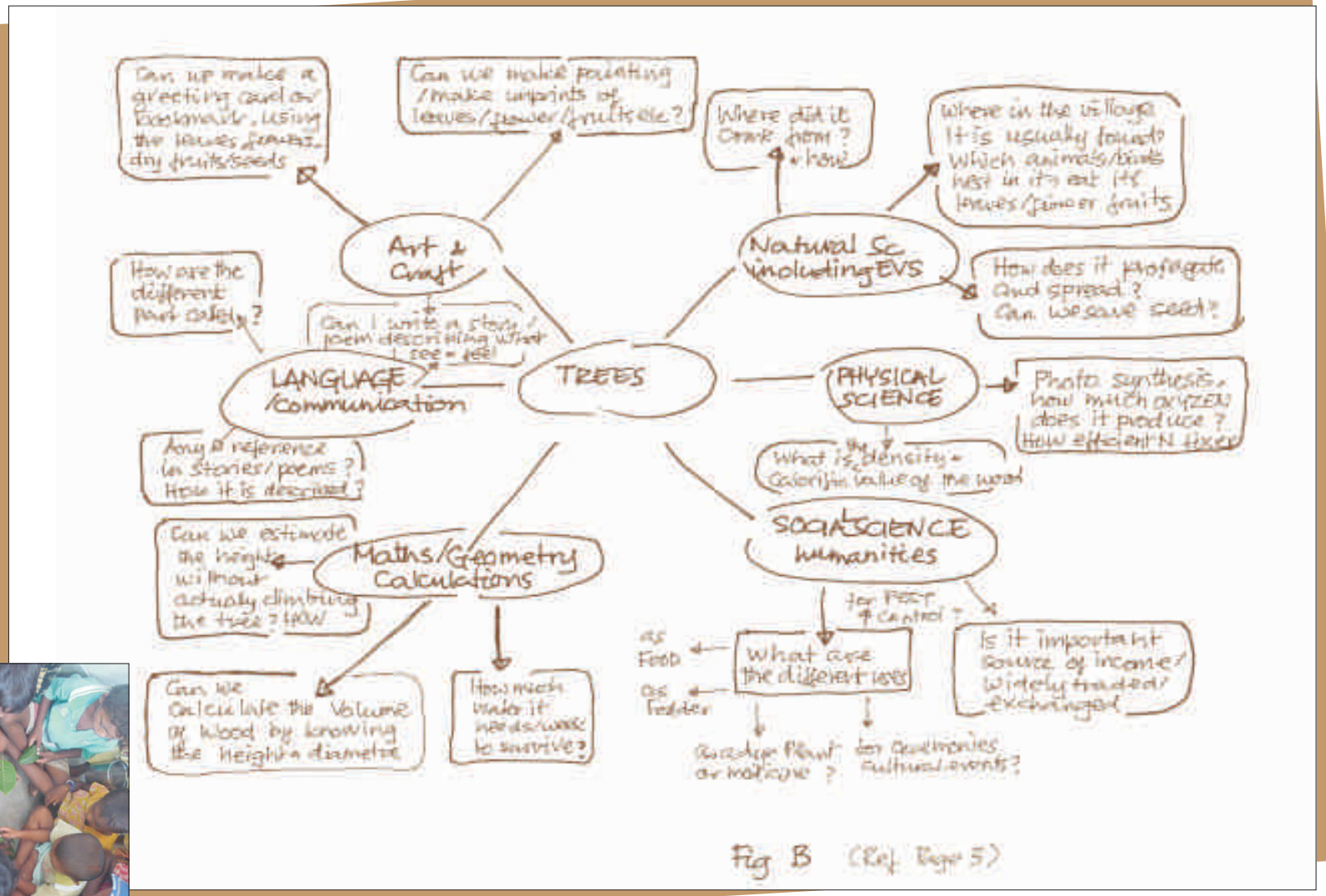
Step 5 : Presenting findings of experiment to other students, to farmers and other members of community by using communication media such as street theatre, songs, charts & posters, demonstrations in a public space etc.

A long term action plan to improve management practices, resolve conflicts of interest, seek help of competent local authorities, may result from these discussions

Place & Community Based Education as a pedagogic / learning process thus is based on connecting the students/learners to nature & culture. They work individually and in groups to explore & document real-life issues/conflicts, particularly related to local climate/weather pattern and ecosystem + biodiversity and develop creative & sustainable solutions mainly through participatory analysis, experiments and action research projects, the results of which are examined/evaluated against pre-determined indicators.

In fig B, a mind map exploring interconnection with different subjects/themes is illustrated

Kindergarten children studying local trees



Objectives of PCBE

× To develop a sense among the learners, of caring for and belonging to a place and respect for all living things and appreciation for their right to exist, even if they do not benefit us directly.

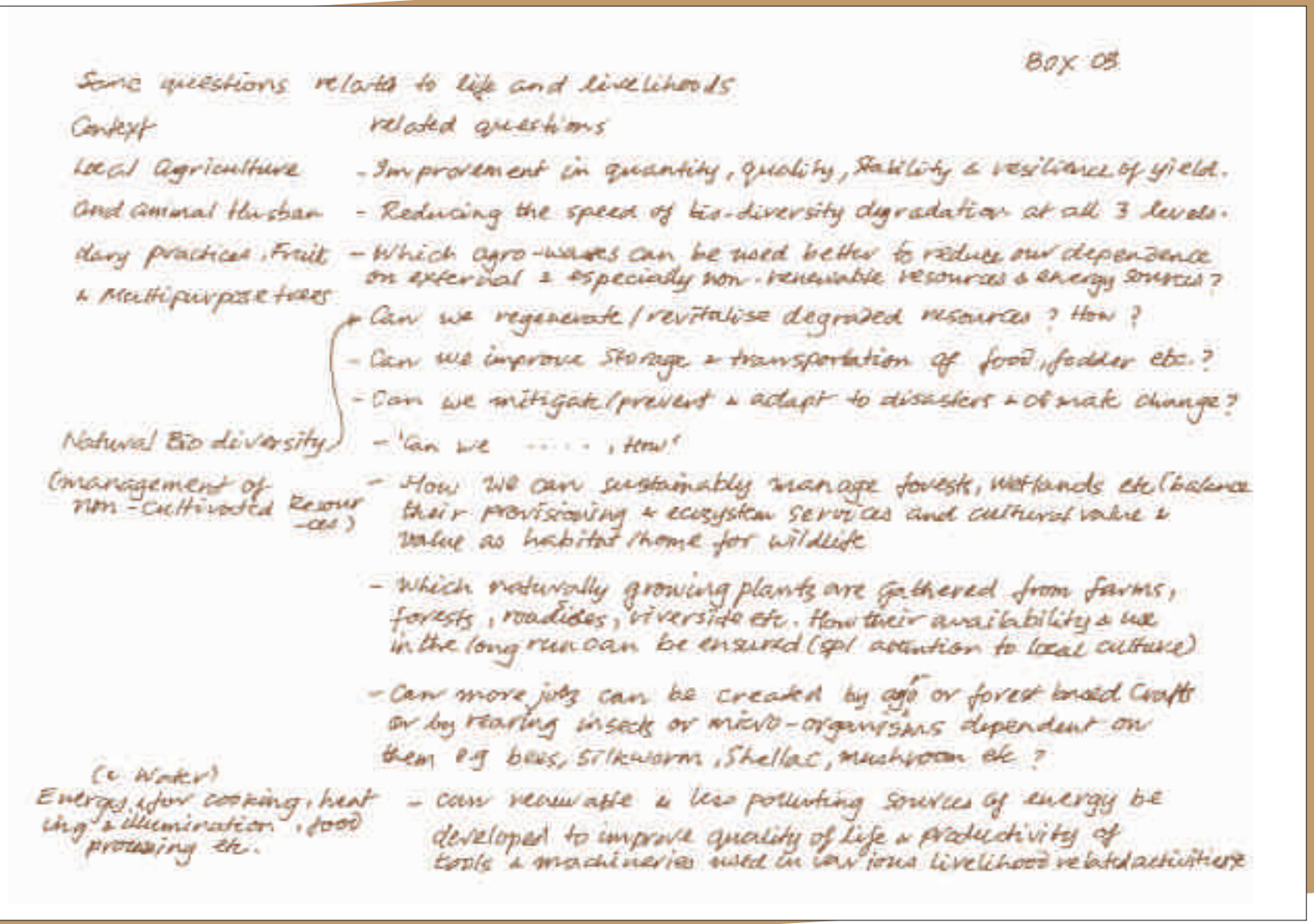
× To encourage & support creative / innovative thinking and nurture joyful, confident, cooperative and attentive/active learners

× To develop abilities & skill whereby learners can identify development issues of the area where they are located and make the school more relevant to the communities and thereby create / improve social relationships / fellow feeling.

School gardens, Home gardens at students' houses, Community managed firewood & fodder forests, raising animals, protecting a water body or hillock, Cooking Classes are some of the activities/projects around which the PCBE can evolve

Garden Based learning for example encourages thinking & developing a garden design (choice of Plants, allocation of spaces, design of beds/ponds/trellises). It also helps learners to think about maintenance needs and responsibility sharing (rotation plan, holiday plan etc) As things start growing, children focus on their uses / nutritional value, market price, storage and preservation method etc.

An illustrative chart (Box 3) has been provided to generate more ideas



Box 03

Some questions related to life and livelihoods

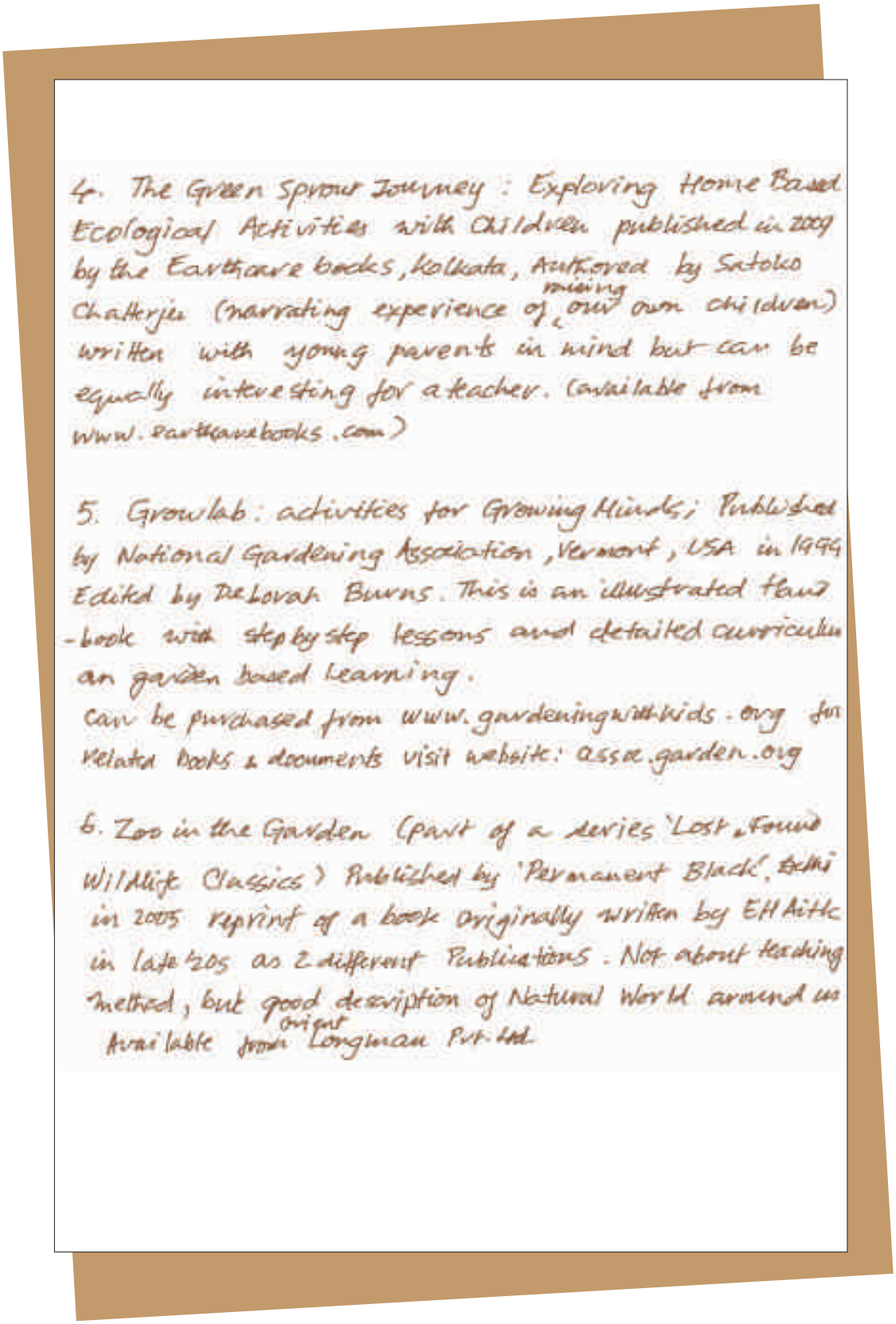
Context	related questions
Local Agriculture And animal Husbandary practices, Fruit & Multipurpose trees	- Improvement in quantity, quality, stability & resilience of yield. - Reducing the speed of bio-diversity degradation at all 3 levels. - Which agro-wastes can be used better to reduce our dependence on external & especially non-renewable resources & energy sources? - Can we regenerate / revitalise degraded resources? How? - Can we improve storage & transportation of food, fodder etc.? - Can we mitigate/prevent & adapt to disasters & climate change?
Natural Bio diversity	- 'Can we ..... , How'
(management of non-cultivated Resources)	- How we can sustainably manage forests, Wetlands etc (balance their provisioning & ecosystem services and cultural value & value as habitat/home for wildlife - Which naturally growing plants are gathered from farms, forests, roadsides, riverside etc. How their availability & use in the long run can be ensured (spl attention to local culture) - Can more jobs can be created by agro or forest based Crafts or by rearing insects or micro-organisms dependent on them eg bees, silkworm, Shellac, mushroom etc?
(e Water) Energy, (for cooking, heating & illumination, food processing etc.	- Can renewable & less polluting sources of energy be developed to improve quality of life & productivity of tools & machineries used in various livelihood related activities

Further Reading & References :

① Creative Lesson Plans on Tree, Insects, Water Medicinal Plants, Birds, Rice, Waste, Vegetable, Local Market, Fish etc were published by DRCSC, Kolkata around 2010-2012, Summarising the experiments & findings from a four year project (ENRE) with middle school (level) children both in formal & non formal schools & education centres in Six different districts of West Bengal (www.drcsc.org)

② The Foxfire book - published in 1972 by Doubleday New York, summarising the articles by children of a mountainous region in Mid sixties and published first as local magazine. The articles are based on children interviewing their parents and neighbours about daily life in this relatively remote region. Several volumes of the book has been published from different cities and in different languages. For details readers may visit their website too! (www.foxfire.org) The three volumes set can be ordered from Amazon.Com both in Printed and in pdf form.

3. Childrens Food Forest - an Outdoor Classroom 1996, Published by FeFL Books, Australia. Authored by Carolyn Nuttall based on her long experience of working with children in early 90's. [She also is a "Permaculture" trainer, like me and my wife, Satoko]



4. The Green Sprout Journey : Exploring Home Based Ecological Activities with Children published in 2009 by the Earthcare books, Kolkata, Authored by Satoko Chatterjee (narrating experience of raising our own children) written with young parents in mind but can be equally interesting for a teacher. (available from www.earthcarebooks.com)

5. Growlab : activities for Growing Minds; Published by National Gardening Association, Vermont, USA in 1994 Edited by DeLovah Burns. This is an illustrated Hand-book with step by step lessons and detailed curriculum on garden based learning.
Can be purchased from www.gardeningwithkids.org for related books & documents visit website: assa.garden.org

6. Zoo in the Garden (part of a series 'Lost & Found Wildlife Classics') Published by 'Permanent Black', Delhi in 2005 reprint of a book originally written by EH Aitchi in late '20s as 2 different Publications. Not about teaching method, but good description of Natural World around us Available from Orient Longman Pvt. Ltd.

Ardhendu, aged sixty, has lived in many regions of India and has worked among both and adults in the context of sustainable food and livelihood security. After graduating from Calcutta University, he has completed a Diploma course in Rural Leadership from Asian Rural Institute in Japan, and has worked with several local and international NGOs in India and South Asia. He presently lives in Chandannagar, Hooghly. He may be contacted at ardhendu.sc@gmail.com