Chapter 8
Children's Engagement with the Natural World as a Ground for Healing

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Abstract This chapter examines children's affinity for the natural world, benefits for children from contact with nature, and how programs for ecological restoration and caring for plants and animals can promote young people's resilience and recovery after conflict and disasters. Masten (2001, p. 228) defines resilience in childhood as 'good outcomes in spite of threats to adaptation or development'. It is not a special attribute that makes some children invulnerable to adversity, but what Masten calls the 'ordinary magic' that happens when children manage to find essential resources for healthy development even in difficult circumstances. The literature on resilience has emphasized the importance of caring social relationships and supportive institutions like effective schools, not recognizing that children can draw strength and healing from the natural world as well. Most of the literature on helping children affected by war and natural disasters also neglects this potential. This chapter demonstrates the value of children's relationships with nature and the importance of integrating healing green spaces into programs to help children recover after disasters and conflict.

Keywords Children • Nature • Gardening • Resilience • Recovery from trauma • Health

Using examples from children displaced by war, poverty, and natural disaster in South Africa, Sri Lanka, and other countries, and studies of the responses of children under stress to animals and gardening, environmental psychologist and educator Louise Chawla demonstrates the healing value of children's interaction with nature. She suggests a list of green protective factors that promote children's resilience through reducing risks, building assets, and mobilizing others who connect with children through greening.

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Nature in Children's Lives and in Childhood Memories

Adult memories of childhood and children's own choices in ethnographic research show the importance of 'special places' (Sobel 2002) and 'secret spaces' (Goodenough 2003) where children can escape from adult surveillance and restrictions and the upsetting events that life sometimes brings. Often these special places are in nature: down in the woods, up in a tree, beside water. They are places where children can go to be alone or with playmates or a pet, to draw, read, write, muse, create miniature worlds, play house, play shop, or otherwise assimilate and transform their experience. In Goodenough's words, for children these places are 'essential to putting things together for themselves and becoming who they are' (2003, p. 2). Sobel (2002) draws on the ideas of Edith Cobb (1959, p. 540), who said that these places reflect a child's drive 'to make a world in which to find a place to discover a self': a self that is at once unique and related to the world. When relatedness to nature is an important dimension of a sense of self, Clayton (2003) calls it an environmental identity. It may be based, she notes, on personal history and emotional attachment to some part of nature, such as a tree or mountain, and it may or may not manifest itself in action to protect the environment, but it gives a sense of being part of a whole that is larger than any human creation.

In a review of autobiographies by diverse authors (Chawla 1990), the gifts that people most frequently attributed to memories of a connection with nature in childhood were a fund of calm that they could later draw upon, and a sense of the integration of nature and human life. This is eloquently expressed by Howard Thurman (1979), an African-American minister and leader of the civil rights movement in the United States, who grew up near the North Carolina coast. When his father died, he listened to the graveside minister preach his free-thinking father's soul into hell. Afterwards his mother was absent long days as she cooked and cleaned for white households. Thurman found that he could bring his feelings to the great oak tree that grew behind his family's home; and the tree, in its aliveness, listened. 'I could reach down in the quiet places of my spirit, take out my bruises and my joys, unfold them and talk about them. I could talk aloud to the oak tree and know that I was understood' (p. 9). He also found that he could put his troubles in perspective when he walked the seacoast, day or night. 'I had the sense that all things, the sand, the sea, the stars, the night, and I were one lung through which all of life breathed. Not only was I aware of a vast rhythm enveloping all, but I was a part of it and it was a part of me' (p. 226). These experiences, he learned, gave him 'a certain overriding immunity' against the pain in his life: 'I felt rooted in life, in nature, in existence' (p. 8). When two studies asked a broad spectrum of people if they recalled any experiences of a deep sense of harmony with the world in childhood, many responses echoed Thurman's words (Hoffman 1992; Robinson 1983). Many people described experiences of nature and observed that these memories formed a core of peace that they could return to later amid life's turmoil.

These are adult memories of childhood, but they are consistent with research with children themselves, which suggests that children highly value places in nature as long as they perceive them to be safe. This is true of many studies of children's favorite places (Chawla 1992), as well as ethnographic studies that use multiple methods to understand how children use their environment. These studies show that children seek out nature along creeks and riverbanks and in woods, parks, gardens and vacant lots, whether they live in rural towns in Vermont (Hart 1979) or Bolivia (Punch 2000), an old city or new town in England (Moore 1986), a Muslim slum in India (Chatterjee 2006), a low-income district of Montreal (Castonguay and Jutras 2009), or a Latino neighborhood among refineries and Superfund sites on the edge of Denver (Strife 2008). In the *Growing Up in Cities* project, which involves low-income urban children in documenting their communities and their priorities for improvements, children repeatedly identify safe natural areas as an important element of a good place to live. This was the case when the project was begun in four countries by Lynch (1977), revived in eight countries by Chawla (2002), and since then implemented in new sites in Johannesburg (Swart-Kruger and Chawla 2002), New York (Chawla and Driskell 2008), Nairobi (Driskell and Chawla 2009), Papua New Guinea, and the Cook Islands (Malone 2007).

The value of green spaces and gardens under even the starkest conditions is exemplified by the story of a *Growing Up in Cities* site in South Africa, where researchers followed 10 through 14-year-olds through the crisis of violent eviction (Swart-Kruger 2002). When the study began, the children lived in a squatter camp on the edge of downtown Johannesburg. When they led the researchers on tours of important places in their lives, they revealed that their territory was anchored on one end by the squatter camp and on the other end by a neighborhood school, but they took a circuitous route on the way home from school to visit an adjoining neighborhood named Fietas, which contained a park with trees, a sports field and a playground. Because they were expected to go straight home to do chores, the park was for them a special and secret space, where they were temporarily free from the control of either teachers or parents (Chawla 2003).

When the squatter camp was suddenly evicted on short notice, the researchers followed the children to their new location in dry veld 30 km outside the city. In their drawings of what they wanted in their new place, the children still identified a children's center and a playground, which were priorities before, but now they included trees and gardens—trees for shade and food producing gardens. In one of the drawings, a boy reproduced the park in Fietas, complete with its trees, green lawn and play equipment. His drawing suggested that this oasis for free play was not only a valued memory, but also raw material in his imagination for constructing a better life.

When Chatterjee (2007) described the participation of children in Delhi, India in fighting a forced eviction and improving their new settlement, their story was similar. The 8–16-year-olds decided that their first priority in their barren new location was to plant trees. They proceeded to get donations from a local nursery, plant 225 trees, and guard them from grazing cattle and the harsh sun with enough success to earn the respect of the nursery staff, who pledged plants for ongoing greening.

When Hinton (2000) did ethnographic research with families of Nepali origin who had fled Bhutan, she discovered that one of their ways of healing was to find spaces where they could imagine new futures—in contrast to the foreign approach introduced by aid agencies, which expected them to talk about their traumas. This is evident in the following account by Arati, a 17-year-old girl:

> I used to wake early in the morning … I was going for a morning walk, near the river Mai … I enjoyed the chilly cold of fresh morning, while I was washing there my pleasure mind made me to go little far across the river … This fresh environment brought some kind of pleasure that could make me dream of tomorrow and forget the sorrows in the life of a refugee (p. 203).

The 'fresh environment' of the river gave her space for solace and hope. This girl and the children in Johannesburg and Delhi had freedom of movement to discover opportunities for play, refuge, and sustenance for both body and spirit that green spaces, gardens and elements of nature afford. In her ethnographic study of war-affected children in Sri Lanka, Trawick (2007) found that loss of control over personal space and movement was one of the greatest hardships of war, along with separation from family and the loss of loved ones. Its importance was highlighted for her by Menan, a 16-year-old boy whose father had been killed in the war. Although he was strongly attached to his mother in the city of Batticaloa, he preferred to be on family land in the countryside where he had more freedom. One day he took Trawick with him on a long bicycle ride to the family farm. He confidently made his way along jungle paths and rice paddies, reconnecting with his grandfather in one of the thatched huts, and clambering up big rocks to show her the green expanse of the landscape.

After they returned to the city, Trawick brought Menan paper, crayons and watercolors. A few days later he gave her a picture and accompanying essay. The upper half of the picture was a landscape of tall trees, with someone planting another tree. Clear, clean water ran beside them. In the lower half, the bank of the water was littered with dead branches and a man was chopping a tree down. In his essay, Menan explained that the lower half represented both the environmental destruction of war and the fate of his people, who were being cut down like trees. In the upper half, he wrote, 'A young boy is planting a tree. Therefore that environment grows with great flourishing. Therefore on that side all the species of creatures live freely'. Further in his essay he associated the tall trees with a government that would protect his people's rights.

The Importance of Access to Nature for Children's Well-Being

Since the 1980s, research has been establishing empirical links between contact with nature and human well-being. In studies with adults, physiological measures demonstrate that when people walk in parks or nature reserves, have window views of nature, or look at pictures or films of natural landscapes, their heart beat slows, blood pressure drops, alpha brain waves deepen, and levels of stress fall (see reviews,

Okvat and Zautra, Chap. 5, and Wells, Chap. 7 this volume). Although immediate physiological measures of children's responses to nature are lacking, research with young people is consistent with these findings. Children's access to natural views and play areas is associated with better performance on tests of concentration, inhibiting impulses, and delaying gratification (Faber Taylor et al. 2002; Wells 2000), as well as reduced symptoms of attention deficit hyperactivity disorder (ADHD) attention deficit/hyperactivity disorder (Faber Taylor et al. 2001; Faber Taylor and Kuo 2009; Kuo and Faber Taylor 2004). Of particular relevance for children who face conflict and disasters, Wells and Evans (2003) found that the degree of natural surroundings around the home predicted the ability of 8 through 11-year-olds to successfully cope with life stresses, based on parents' reports of their children's behavior and children's own self-reports, and this buffering effect of nature was strongest for children who experienced the highest levels of stressful events. Also suggestive, a large Dutch study measured proximity to green spaces and incidences of disease, and found that people who lived within 1 km of a green space had significantly lower rates of 15 major illnesses; the biggest impact was on anxiety disorders and depression, and the effect on depression was strongest for children under 12 (Maas et al. 2009). All of these studies controlled for family income.

Investigations of children's direct engagement with nature through play, animal care and gardening reinforce these findings. In Sweden and Norway, comparisons of preschool children who differed only on the measure that they either had a traditional built playground, or a field, orchard or forest, for their play found that over the course of a school year, children with the natural play areas made the greatest advances in tests requiring concentration (Grahn et al. 1997) and motor coordination and agility (Fjortoft 2001; Grahn et al. 1997). These are important measures of children's developing self-control and competence.

Nature play is also associated with more cooperative and creative play. The Swedish preschoolers with access to the field and orchard developed more varied and elaborated patterns of play, including more complex make-believe stories (Grahn et al. 1997). In observations of United States preschools, children who played among trees and shrubbery in their schoolyard engaged in more creative social play than children on built equipment (Herrington and Studtmann 1998; Kirkby 1989). In observations of people's behavior in open spaces of a Chicago public housing project, children in outdoor spaces with trees and other vegetation engaged in more play and more creative forms of play than children in barren spaces, and had more positive interactions with adults (Faber Taylor et al. 1998). Chawla (2007) has reflected on features of the natural world which engage children's deep concentration, creativity and developing sense of competence, and which may help explain these results.

Animals are a special part of the natural world which children often come to know intimately as pets or farm animals in their care. Companion animals can convey a sense of nonjudgmental acceptance, allowing children to fill in both sides of the 'dialogue' when they talk to their pets, but still showing responses like nuzzling, purring and chirping (Melson 2008; Myers 1998). In controlled studies with children diagnosed with oppositional-defiant disorder, conduct disorder, autism, and severe ADHD,

Katcher and Wilkins (2000) and Katcher and Teumer (2006) found that when children in a residential treatment facility or special education classes had programs of nature study and animal care, they consistently showed significant decreases in disruptive behavior and improved social skills, compared to the way they behaved in traditional classroom settings. The positive effects were strongest for children diagnosed for aggression, hyperactivity, and lack of attention to the environment.

Gardens can also be healing places for children (Moore 1999). Extended gardening programs with children show many benefits (Blair 2009; Robinson-O'Brien et al. 2009), including an improved sense of self and social skills. When 8–11 year-olds in a 1-year gardening program were compared with non-participating peers, they showed significant gains in self-understanding and the ability to work in groups (Robinson and Zajicek 2005). Youth interns in community gardens in a low-income neighborhood of New York reported increases in maturity, responsibility and interpersonal skills (Hung 2004). Juvenile offenders who engaged in horticultural training and community landscaping gained more responsible environmental attitudes (Cammack et al. 2002a) and greater self-esteem (Cammack et al. 2002b). For children who had recently immigrated into Canada, creating multicultural school gardens increased their sense of belonging and connection to their new environment (Cutter-Mackenzie 2009).

None of these studies deal directly with children's recovery after armed conflict or disasters like floods or earthquakes. To a striking degree, however, they include populations of children who faced adversity, risk and special needs: children from backgrounds of poverty (Faber Taylor et al. 1998, 2002; Hung 2004; Wells 2000); children who face upsetting events (Wells and Evans 2003); children with learning disabilities (Faber Taylor et al. 2001; Faber Taylor and Kuo 2009; Kuo and Faber Taylor 2004) and behavior disorders (Katcher and Wilkins 2000; Katcher and Teumer 2006); new immigrants (Cutter-Mackenzie 2009); and juvenile offenders (Cammack et al. 2002a, b). A caution by Boyden and Mann (2005) needs to be kept in mind: that the severity of experiences should be understood from the perspective of children themselves. To a child, broken families, social stigma or poverty—'normal adversity' in adult eyes—may involve as much distress as events like floods or war that adults classify as major disasters. If contact with nature functions as an important resource for children under the conditions that have been studied, it is reasonable to expect that it will also be meaningful to children who face upheavals of other kinds.

Ingredients for Children's Resilience

Most of the empirical studies that document positive outcomes for children from contact with nature have been done in fields outside developmental psychology—such as human ecology, landscape architecture or agricultural extension research—and most have been published since the late 1990s. Despite their relevance, they have failed to attract attention from people who investigate resilience in

childhood—an area of study that began around 1970. Besthorn (2005) noted that research on resilience in children and research on the effects of contact with nature for child development have evolved independently of each other. Masten and Obradovic (2008) came to a similar conclusion when they reviewed the scholarship on resilience and noticed that work that embeds human development in ecosystems is striking by its absence. It is also strikingly absent from a handbook for helping families and children respond to disasters of all kinds, including natural and techno-logical disasters (Rosenfeld et al. 2005), and from recent reviews of research, programs and policies to help children reconstruct their lives in post-war settings (Boothby et al. 2006; United Nations Children's Fund 2009). One promising area for integrating gardening and greening, whenever possible, would be the Child-Centered Spaces which are being established in war zones, where aid workers and trained local caretakers offer a combination of protection, social support, and educa-tion in life skills (Kostelny and Wessells 2008).

Resilience reflects the dynamic, interactive process that occurs when children exhibit personal strengths by reaching out to find care and support, and people and places around them provide vital resources that they need for healthy development (Benard 2004; Masten 2001). These strengths include social competence, problem-solving abilities, initiative, self-efficacy, and a sense of positive meaning and pur-pose in life. In the words of Benard (2004, p. 14), they 'are what resilience looks like'. They are at once positive developmental outcomes that demonstrate the capac-ity for resilience, and capacities through which children connect with protective factors in their families and communities in order to continue on a positive path.

Research on protective factors has focused on the quality of social relationships in families and communities, along with the availability of supportive institutions like effective schools, social services, and prosocial organizations like church groups and youth clubs (Benard 2004). In all of these settings, protective factors include caring relationships, high expectations for children's achievement, and opportuni-ties for young people to contribute to their society in valued and meaningful ways. The potential for children to benefit from engagement with nature remains almost completely unexplored. Leading theories of resilience, however, could accommo-date the role of nature in children's lives.

Masten and Obradovic (2008) observe that theoretical frameworks for resilience at the level of individual children draw on developmental systems theory (Lerner 2006) and the ecological model of development of Bronfenbrenner (1979). According to these perspectives, resilience arises from adaptive processes across multiple levels of functioning: genes; neural systems; the immune system and other physical systems of health; relationships with family members, friends and neigh-bors; institutions like schools; and more distant systems where decisions and prac-tices impact children's worlds, like parents' workplaces, or local and national governments. To these systems, it would be possible to add the different forms of nature experiences that have been connected to children's health and well-being, including special places for refuge and nature play, green views, bonds with pets, animal care and gardening, along with more distant systems that can sustain these experiences like departments of parks or regional ecosystems. A list of 'green

Table 8.1 Natural environments as protective factors that support children's strengths and resilience

Environmental features	Benefits for children that increase strengths associated with resilience
Natural surroundings and views of nature	Better concentration (Faber Taylor et al. 2002; Wells 2000)
	Better ability to inhibit impulses and delay gratification (Faber Taylor et al. 2002)
	Better coping with upsetting events (Wells and Evans 2003)
Special places in nature	Opportunities to assimilate and transform experiences in places that are responsively alive (Goodenough 2003; Sobel 2002)
	Opportunities to feel connected to the larger universe of living things (Clayton 2003)
	Memories that form a reservoir of calm to draw upon (Chawla 1990; Hoffman 1992; Robinson 1983)
	Familiarity with nature as a favorite place that can be recreated in new places (Chawla 2003)
Nature play	Better concentration, ability to stay on task (Grahn et al. 1997; Faber Taylor et al. 2001; Faber Taylor and Kuo 2009; Kuo and Faber Taylor 2004)
	Better motor coordination and agility (Fjortoft 2001; Grahn et al. 1997)
	More cooperative, creative social play (Grahn et al. 1997; Herrington and Studtmann 1998; Faber Taylor et al. 1998; Kirkby 1989)
Animal companions	A feeling of acceptance by a responsive, nonjudgmental creature (Melson 2008)
Animal care	Better self-control (Katcher and Teumer 2006; Katcher and Wilkins 2000)
	Better social skills (Katcher and Teumer 2006; Katcher and Wilkins 2000)
Gardening	Greater self-understanding (Robinson and Zajicek 2005)
	Greater self-esteem (Cammack et al. 2002b)
	Better interpersonal skills and ability to work in groups (Hung 2004; Robinson and Zajicek 2005)
	Increased sense of connection and responsibility to the environment (Cammack et al. 2002a; Cutter-Mackenzie 2009)

protective factors' is proposed in Table 8.1. They cut across all three strategies for promoting resilience in children and youth that Masten and Reed (2002) identify: reducing risks (such as reducing impulsive behavior), building assets (such as improving concentration), and mobilizing the power of human adaptational systems (such as connecting children to mentors and friends through gardening).

Existing theories of resilience and recovery from trauma have heavily influenced programs for child protection and reconstruction after war and natural disasters. Boyden and Mann (2005) and Kostelny (2006) observe that this can be problematic, for these programs often fail to accommodate the diversity of social, cultural and environmental contexts in which children around the world respond to adversity, or to consider how young people make meaning out of their experiences. Like theories

of resilience, theories of child protection and reconstruction after wars and natural disasters need to be broadened to include the natural environment as an element with which children can meaningfully engage, and not just as a stock of resources. Kostelny (2006) includes 'environmental resources' in the background of her socio-ecological model of factors that influence children's well-being during and after war, but the evidence in this chapter suggests that nature often figures in the fore-ground of children's experience. The following section presents examples of exceptional initiatives which have recognized children's voice and agency and responsively included farming, gardening, animal care, green refuges, and nature play in integrated programs to support children's well-being under conditions of war, displacement, or natural calamities.

Rooting New Life in Nature

When Malekoff (2007) worked with young adolescents who lost a parent in the attack on the World Trade Center, he concluded that the most vital forms of support that children need after a great loss are safe places to go, worthwhile things to do, and opportunities for belonging. Providing these resources requires respecting children's capacities and offering opportunities for action that represent triumph over helplessness and despair. Malekoff combined these ingredients by engaging the adolescents, siblings and surviving parents in contributing to the construction of a memorial garden for the victims of the attack. The young people and their families decorated large stones with images that they associated with their lost parent, and then joined in a ceremony to lay the stones in the garden, creating a place of peace and a testament to their shared work to which they could return.

This kind of decorative garden design represents a form of art therapy. For rural children and children in the developing world, however, gardening is often a necessity to meet basic needs. Gibbs (1994) recorded children's contributions to restoring farms and gardens when she documented post-war reconstruction in Mozambique. When she asked adults what was the most important thing that children needed to piece their lives together again after the war, they replied: 'The most important thing we can do for children if they don't know is to show them how to work … that there is no food without work' (p. 272). This expectation corresponded to children's traditional role in agriculture, where they began digging in the fields by the age of 5 or 6. It also corresponded to a local view of children as particularly strong and resilient, in contrast to Western views of children as particularly vulnerable. In Mozambique, people said:

> A child is like a banana tree …. Once you plant one they will reproduce themselves, after five or six years they will grow alone—independent of their parents. Children are the same, after some years they are independent and can grow on their own. They are survivors, like the banana tree; if there is a forest fire and you go away when you come back you can find a lot of trees burnt, but the banana trees are often alive (p. 271).

When Gibbs talked with children about the war and reconstruction, a boy told her that the most difficult part of displacement was losing his garden, and one of his greatest satisfactions was having his own field filled with sugar cane and cassava once again.

In this culture, children who had been in combat regained standing in their community by contributing to the hard work of planting and rebuilding. Along with adults, they also shared practices for healing that included traditional medicines, harvest rituals, and reacceptance into church communities. Gibbs noted that reengagement in the management of everyday life and community practices for healing may be vital everywhere, but the specific form this needs to take must be identified in the context of each country and culture.

When Save the Children developed guidelines for reconstruction after war or natural disasters, a model project in Cooks Nagar, South India demonstrated that when young people are listened to and trusted, they tend to steer their communities to a balanced respect for children's needs for both work and play (Bartlett and Iltus 2006; Bartlett 2008). When children engaged in participatory processes to rebuild their village after the Indian Ocean tsunami, they expressed a keen desire to replant trees and to receive training to establish a tree nursery. For them, trees promised safety as well as shade, as climbing trees had saved many lives when the wave hit. They also determined that they wanted a variety of green spaces so that everyone would have a play area nearby, and teenage girls would have quiet green places where they could sit with friends—rather than a single playground with expensive fixed play equipment.

Children can also protect their communities proactively. On the Camotes Islands of the Philippines, teams of children have restored degraded mangroves to control storm surges, buffer typhoon winds, capture greenhouse gases that cause climate change, and provide fish and shrimp spawning grounds (Tanner et al. 2009). Assembling information from a range of sources, they designed and led the restoration effort by collecting and replanting saplings in sanctuaries behind protective barriers.

Two programs in distant parts of the world demonstrate ways to fuse garden making with local needs and Western concepts of play therapy. In the midst of civil war, the Butterfly Garden opened in Batticaloa, Sri Lanka to establish a 'zone of peace' for children, as a partnership between McMaster University of Canada and a counseling center for war victims run by a local Jesuit priest. Constructed on the two-acre site of a former monastery garden and zoo, the garden is dedicated to 'earthwork, artwork, heartwork, and healing' (Santa Barbara 2004). It maintains long-term relationships with children who are referred from surrounding schools, usually because of difficulties at home or school associated with the effects of the war. A colorful Butterfly Bus collects 6–16-year-olds from the surrounding region—Tamil and Muslim, boys and girls—for after-school and weekend activities. The program is conceived of as three spirals that unfold in succession (Ashoka Fellows 2003; Santa Barbara 2004). The first focuses on caring for the garden and its animals, painting, singing and playing. The second uses art to explore emotions and themes like family and identity, culminating in a public offering in the form of a play, parade, opera or art exhibit. In the third spiral, the children carry what they

have learned back to their homes, including helping to create 'seedling gardens' in their communities. The activities are facilitated by artists and counselors who are often war victims themselves.

In Guatemala City, a Children's Garden of Hope has taken form on the edge of the city's main garbage dump to serve children from the surrounding shantytown whose families subsist on scavenging in the dump (Winterbottom 2008 and Chap. 30, this volume). Most of the families fled Mayan villages in the highlands, displaced by civil war and land evictions. Safe Passage, a nonprofit that supports education for the poorest of Guatemala's children, collaborated with the Landscape Architecture Design/Build Program of the University of Washington to lead a community design process with children, their mothers, teachers and child care providers to hear their ideas about what they wanted to see on the 1.2-acre site. The resulting complex includes a preschool and vocational school, paved plaza that doubles as an outdoor classroom rimmed with sensory and habitat gardens, small children's exploratory garden, adventure play garden for older children, shaded sitting areas, soccer field, extensive tree plantings to absorb soil toxins from the dump, and raised beds where mothers can pass on to their children traditional practices of cultivation and harvest fresh produce to supplement their families' nutrition. The garden program seeks to address children's social, physical, educational and emotional needs, so that they will have the resources and skills needed to grow beyond the poverty, violence and despair that define life next to the dump.

This chapter has shown that when we look for the value of nature in children's lives, we find evidence of its importance whether we turn to childhood memories, ethnographic fieldwork with children themselves, or research on the effects of contact with nature for children's health and competence. We can also find programs that have understood how to integrate nature into zones of peace and reconstruction. The evidence indicates that nature can be a vital protective factor in children's lives, and a feasible dimension of programs for reconstruction and risk reduction.

But the evidence in this chapter does not stop here. As Boyden and Mann (2005) note, 'conflict' and 'disasters' need to be understood from the perspective of children themselves, for whom everyday shocks like poverty, prejudice, illness, disability, a family death, domestic violence, or bullying at school—any number of adversities— may qualify as disasters in a child's experience. This chapter's focus on conflicts and disasters on a large scale should not draw attention away from the conclusion that access to nature and gardens of hope and peace are resources that have the potential to support the healthy development of all children everywhere.

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