As a scientist with experience of working in India and abroad, and with no record of activism, I present a personal view on empowerment, focusing on Kerala as an example.

To me, female empowerment means the freedom to choose one’s path in life, such as is already available to men; and the chance to compete on equal terms against men for opportunities, without bias or prejudice. But with freedom comes responsibilities; freedom without responsibility would be neither desirable nor sustainable. Too often, discussions about female empowerment emphasis the rights of women and not so much the responsibilities.

**What does equality imply?**

We should bear in mind that diversity in human beings ensures that no two people will be equal. Specifically, there are biological reasons why men and women cannot be equal. Instead, let us emphasis equality for all before the law: female empowerment requires that the laws of the country enshrine, uphold and defend the equality of man and woman. But beyond this, for true equality to prevail, everyone must accept, and subscribe to, the concept of equal freedom and equal dignity for all.

Equality in formal educational levels does not necessarily translate into equality in the work place. The best response to prejudice is quality of work. We have to strive for excellence, in all aspects of work. The corollary is that, if we are striving for equality, then we have to be prepared to work hard. There is no short cut to success. Moreover, reservation, or affirmative action cannot be a final solution, only a stepping stone towards equality. Individual excellence, coupled with collective action, can have a powerful effect. Furthermore, an informed, educated female population effectively doubles the size of the electorate, and can be a voice for change.

**How could empowerment work?**

If empowerment is the process of obtaining basic opportunities for marginalized people, directly or indirectly, and if the process is to be non-confrontational, then the non-marginalized have to be part of the process. Without dialogue, there is a risk that the two halves become adversaries, which would be detrimental to progress.
Example of Kerala

Since India attained independence, the literacy rate in Kerala has increased significantly, to more than 90% overall (in fact, technically, this allows the state to call itself 100% literate), and the difference between female and male literacy rates has decreased. Nevertheless, there is still a difference of some 6% between male and female literacy, so we should not be too complacent. Hand in hand with improved literacy, life expectancy in Kerala has also improved remarkably. In fact, Kerala became a subject of numerous studies as an anomalous case: high life expectancy and quality of life, even though the gross national product was low (see Figure 1). Some experts relate improved quality of life in Kerala, at least in part, to improved status of women: “Despite extreme poverty, public commitment to education and health as well as to improving the status of women has in general made the population of Kerala literate and long-lived.” (Amartya Sen, 1993).

Interestingly, the male-female trends are reversed when the statistics for higher education are considered. Women now dominate in graduate and post-graduate levels, taking 67% and 78% respectively in 2006-07. I had direct experience of this when speaking recently at another outreach event to a group of college students at Farook College (Kerala), where Habib Rehman (see Figure 2), a NANO member, is on the faculty. The students who turned up for the event were clearly dominated by women (see Figure 3), and I learned that in the Zoology Department there, women were over 80% in graduate classes, and 100% in MSc. I was told that the only reason for this was excellence: women scored high marks in their exams, thereby securing the seats available for higher studies.

But what do these successes mean for the quality of life in Kerala? Since Amartya Sen wrote about extreme poverty in Kerala, the state has been enjoying an economic boom, with the gross product of the state multiplying several fold. Has greater wealth improved quality of life? This is debatable: qualities of environment, and therefore quality of life, have gone down. Pollution of various kinds (plastic, noise, water quality, smog) has increased, traffic is worse. Carbon emission is higher, quality of food has decreased. Kerala has no food security.

There is a general assumption that female empowerment leads to better harmony with nature, and to a gentler, kinder world. Are Kerala women paying any attention to their environment? I return to the idea that an enlightened female population can be a powerful voice for change. It is not apparent that the women of Kerala are using their enlightened status to take better care of their land, their oceans or the air they breathe. Let us hope that the empowerment enjoyed by the women of Kerala will not stop at personal freedoms, but that they will step up soon to take their share of our collective responsibilities towards our environment.

Perhaps there are lessons here, both positive and negative, not just for Kerala, but for all of us. There is a clear need to get the people, not just the women, to think about their environment, especially in developing countries. It highlights the importance of outreach, such as envisaged in various NANO projects. Let us hope that NANO members will take their collective responsibility seriously, and be an instrument of change. And here I address not just the women, but all members of NANO. When it comes to stewardship of our planet Earth, men and women have to pull together.