Malnutrition remains a worldwide challenge with major economic and developmental consequences. The shortage of appropriately skilled personnel is a major limitation for better nutrition programming. In Bangladesh, human resource capacity constraints were identified throughout the system, with a lack of nutrition content in most pre- and in-service health education. Recognizing that process should harmonize with objectives, we aimed to use participatory methods with a group of 20 high-level Bangladesh health staff to contribute to a competency-based nutrition curriculum. We included the following steps: 1) review of the nutrition problem in Bangladesh, 2) identification and validation with all stakeholders of competencies needing strengthening, 3) review of current pre- and in-service training modules on nutrition, 4) review of job descriptions of all health professionals, 5) collaborative development of training modules and, 6) training of master trainers. Three modules were developed for a 9-day training: (a) infant, young child and woman nutrition (including adolescents, overweight/obesity, other nutrition-sensitive interventions), (b) growth monitoring and promotion, and (c) supportive supervision. Participants evaluated all positively; each rated the modules 1 or 2 on a scale from 1 (excellent) to 5 (poor) for content and method. Although many were unaccustomed to using participatory methods, these were consistently rated most highly. Practical group exercises integrated competencies and demonstrated the effectiveness of teamwork and networking. Participatory methods facilitate observation and evaluation of competency skill development. While 9-days is a long period, participants recognized that for maximum effect, participatory methods need time and are threatened by reducing training duration without reducing content. Part-time participation must also be discouraged.