Please find below the learning material as preparation before we start with the project to help the malnourished children in the villages,
在开始为村内小孩提供营养辅助前，请你们先看看一下的一些学习材料作为准备。

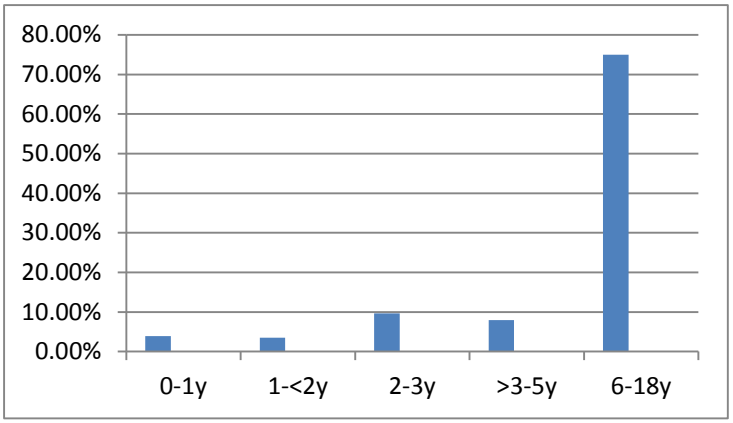
Why do we also need to improve the nutrition condition of the children of PALs ?
我们为什么需要为康复者的孩子们改善他们的营养情况？

Our mission: to help the PALs helping themselves.
To aim our target to help the PALs helping themselves we also need to break the cycle of poverty so that their children could have the better future.
我们的使命：帮助康复者可以自助。
为了达到帮助康复者自主的目标我们同时也需要冲破平穷的循环，使到小孩子能有更好的未来。

The knowledge: literatures show that healthy children learn better and have better educational achievement. A healthy nutrition is crucial in children development. Not only it strengthen the immune systems and lower the risk of non-communicable diseases such as diabetes and cardiovascular diseases, it also proved that people with adequate nutrition are more productive and can create opportunities to gradually break the cycle of poverty (Literature: WHO 10 facts on nutrition). For normal development, children need **adequate nutrition** and **cognitive and social stimulation.** The first 2-3 years of life are crucial for both nutrition and child development. Rapid growth, including brain development places high demands on nutrition.
Worldwide in 2011, 165 million children<5 years were stunted (source UNESCO and WHO)
学术层面：一些学术报告证明了健康的小孩子学习能力更强而且能得到更高的学术成就。健康的营养是小孩成长过程中是必须的。这不但能使小孩子有更强的免疫力，而且也可以降低得到非传染性疾病譬如糖尿病和心血管病的风险；也证明了有足够营养的人期生产力也更高和有能力逐渐的打破平穷的循环。（学术来源：WHO　10 facts on Nutrition; 营养学的 10 个事实）。正常的发育，小孩子需要**足够的营养**和**认知和社会的激励。**小孩子头两到三年的营养和成长是关键的时期。快速的成长，包括脑部发育需要吸收高分量的营养素。2011 年，在全球有一亿六千五百万小于五岁的孩子有发育迟缓的现象（来源：UNESCO and WHO）。

The impression: when visiting the villages, we notice that the children of PALs are small for their age. They **look even chubby (disproportionate fat mass relative to height)** but short for their age.
印象：当我们进村工作时，发现康复者的子女们比他们的个子实际年龄来的小。有些小孩看下去胖胖的**（脂肪密度相对高度不相称）**但是比他们实际年龄来的矮小。

The fact: we have analyzed 492 children from 0-18 years old, with the age distribution as below
事实：我们为村内 492 位 0-18 岁的孩子做了分析，根据年龄得到以下的分布图:



Preschool children: <6y : 122/492 = 24.8% 学前儿童： <6 岁： 122/492 = 24.8%

School children :> 6y-18y: 370/492 = 75, 2% 学童： >6 岁： 370/492 = 75.2%

Using the WHO criteria we found that 93.09% of the children are under the 3 percentile curve for their length or weight, this is the growth patterns which raise concerns for under nutrition. These children are stunting, too small for their age as consequence of chronic malnutrition. **They are at risk for cognitive and learning delay.**

根据 WHO 的标准我们发现有 93.09%的小孩子处于身高和体重都低过百分之三基线的情况，着成长模式引起了对他们营养不良情况的关注。这些小孩子都有成长阻碍，个子比实际年龄来的小，而导致慢性的营养不良。**他们正处于认知和学习迟缓的分风险下。**

Analysis in more details reveals that 22 of 83, (26.5%) of children ≤ 3 years are in moderate and severe wasting condition (WHO criteria: Z score= weight for height respectively <-2 to<-3 and <-3). Amongst the preschool children who are younger than 6 years old, there are 36/122 (29.5%) in the moderate and severe wasting condition. **Wasting is an acute case of malnutrition.**

再详细的分析下揭示了在 83 个≤3 岁 的小孩中，有 22 位是中度到严重的萎缩的情况（WHO 的标准：Z Score = 体重与身高比<-2 到<-3 和<-3）. 在 122 位 6 岁以下的学前儿童中有 36 位(29.5%)处于中度到严重的萎缩的情况。**萎缩=急性营养不良。**

Two reasons why we firstly should focus on these young children:

为何我们首先需要集中在年幼的小孩的两个原因：

1. Malnutrition is **especially difficult to reverse after 3 years old**. (Literature: The Lancet, Volume 371, issue 9610, Pages 417-440, 2 February 2008).
   营养不良在三岁以后就很难逆转了。(来源：The Lancet, Volume 371, issue 9610, Pages 417-440, 2 February 2008)。
2. We may hope that the government will continue to provide school children a free lunch including a glass of milk per day, so that these “elder” children, regarding their meal are more or less covered.
   我们也希望政府能继续的为在学的孩子提供营养午餐，让他们每天都可以喝上一杯牛奶，所以这些“较年长”的小孩，他们的餐饮不多不少的也应该有涵盖了。

To ascertain that the children malnutrition is mainly due to food problem rather than due to a health problem such as infection for example chronic diarrhea, tuberculosis, AIDS etc, we have collected some demographic data and examined 7 children in Xide at the end of last month. We learned that all of these 7 children have received breast feeding in average for 1-2 years, some even received for 3 years long. A child gets breast feeding till the birth of a new sibling. Despite the relatively long duration of breast feeding these young children are in wasting condition, from the history we have taken, it is very likely that their mothers are also suffering from under nutrition. Mothers have 2 meals a day, each meal content 4 eat spoons of rice and watery soup with Yi pickle. As for children after their breast feeding is terminated these children have only 2 meals per day, per meal content only 2 eat spoons of rice with watery soup mixed with Yi pickle. They only eat meat once a year during the Yi New Year. Parents cannot afford to buy fruit or vegetables for the whole family with in average 3-4 children, as consequences they don't buy fruit or vegetables at all. Their crops of vegetables are for sale but not for own consumption. They don't drink milk. They however consume iodine salt.

为了要查明这些小孩子营养不良主要是由于食物的问题而不是譬如是慢性腹泻、肺结核、艾滋等等的健康的问题而产生的；我们去年 11 月底在西德检查和收集了 7 个小童的人口统计资料。我们发现那 7 个小孩都有接受平均 1-2 年的母乳喂哺，有的甚至有 3 年的母乳喂哺或是知道下一个弟妹出生为止。尽管这些小孩有这么长的母乳喂哺期，但是他们还是处于萎缩的状况；从历史上来看，我们也可以知道他们的妈妈也很可能是处于不够营养的状态。这些妈妈每天吃两顿饭，每次 4 瓢羹饭， 加上一些像水一般的彝族酸菜汤。在小孩子断奶之后的饮食也是每天两餐，每餐两瓢羹的饭加上酸菜汤。他们只有在彝族新年的时候才有肉吃。父母也因为每家都有 3-4 个小孩而负担不起水果或是蔬菜，结果呢，他们从来不买水果或是蔬菜。他们所种的蔬菜也不是给自己吃而是拿去卖。他们也不喝牛奶，但是他们有吃碘盐。

All parents have been interviewed has never enjoyed any education at school or somewhere else. The total income per family is between RMB 2000-7000 per year, however the majority have annual income between RMB 2-3000.

所有被访问的父母都没有机会接受教育。他们家庭的年总收入大约在 2000-7000 元，但是大多数是在 2000-3000 之间。

When performing the physical examination we see all of these children are quite dirty, tiny and many appear unhappy. So far we have not diagnosed other disease, that could be the other reason for their malnutrition, yet we need to search in more details whether there is no cases e.g. as parasite infection (Giardia lamblia) etc.which caused their poor condition.

当在进行身体检查时，我们都能发现这些小孩都是蛮脏的，个子小和和多多表现出不开心的样子。到目前为止我们没有确诊任何可以导致营养不良的疾病，也许是有其他的原因导致营养不良，所以我们需要详细的研究看看会不会有其它譬如是寄生虫感染而导致他们这种情况。

Summary of the facts we are facing:

我们面对的事实的摘要：

1. Despite the 1-2 years duration of breastfeeding given, these young children are severely malnourished.

尽管小孩有 1-2 年的母乳喂哺期，但是这些小孩还是营养不良。

2. >25% of children ≤ 3 years and almost 30% of the pre-school are in moderate or severe wasting/acute malnutrition condition.
   >25%的≤3 岁的孩子和差不多有 30%的学前孩童处于中度到严重的急性营养不良状况。
3. 93 % of the children have growth retardation; they are too small for their age, which we called stunting, case of chronic malnutrition and at risk for cognitive and learning delay。
   93%的小孩有发育生长迟缓的现象；他们的个子比实际的年龄小，我们叫这为发育迟缓、慢性营养不良的个案和处于认知和学习迟缓的风险下。
4. So far we don't see any other health problem except food problem as the cause of their malnutrition, further search in more details should be done.
   到目前为止除了食物是导致他们营养不良以外我们没有发现任何健康的问题，我们仍然需要进行更仔细的研究。
5. Under nutrition amongst their mothers。
   他们的母亲也得不到足够的营养。
6. Poor knowledge about good nutrition. (quality of food)
   对于营养的知识贫乏。（事物的质量）
7. Poverty without good crops from their farm (quantity of food)
   平穷，农地不能提供良好的庄稼（和量）。
8. Poor hygiene/sanitation education/ not sufficient toys to play.
   恶劣的卫生/卫生教育/没有足够的玩具。

Conclusion: 结论：

We are dealing with 2 groups of malnutrition amongst these 492 children of PALs:
我们正面对在 492 位中两组营养不良的康复者的孩子：

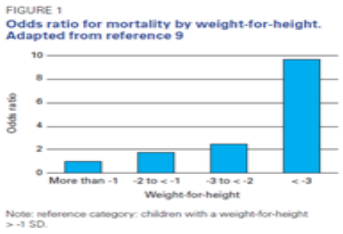
1. 25% of children <3 years old and almost 30% of the pre-school children are suffering from **ACUTE** malnutrition/wasting
   25%的<3 岁的小孩和差不多 30%的学前儿童有**急性的**营养不良/萎缩。
2. >90% of the children are suffering from **chronic** malnutrition/stunting.
   AND mother with under nutrition. Which not only may affect the baby but also the development of unborn baby (the start of stunting).
   >90%的小孩子整被营养不良/成长阻碍缩困扰。而她们的母亲同时也不能得到足够的营养，这不但影响了婴儿，而且也影响了未出生的婴儿（生长阻碍的开始）

How should we approach the problem? 我们应该如何的对待问题？

We need to: 我们要：

A. Act fast to help those wasting, especially the youngest one
尽快的行动来帮组那些有生长阻碍的小孩，尤其是那些最年小的

The youngest children, especially those younger than 24 months are most vulnerable and in worst condition. As mentioned above malnutrition is difficult to reverse in children > 3 years old, one of the important issue is that their brain development is in danger. Moreover as we can see in the figure below, the odd ratio for mortality of children in wasting condition is nearly 10, means they have almost 10 x higher risk of death compare with healthy and well nourished children.
最年小的，尤其是那些小于 24 个月的的孩子最为脆弱和情况最差。正如之前说过，如果营养不良到了 3 岁以后就很难逆转了，最大的问题关键在于这会危害他们的脑部发展。再者，我们也可从以下的图表看到，在萎缩状况下的小孩的死亡奇偶比接近 10，这表示他们的死亡的风险比健康和有足够营养的孩子高出差不多 10 倍。



From Lancet, 2008, 371:243-60.Black RE et al
Maternal and child under nutrition: global and regional exposures and health consequences

B. plan a sustainable help for those stunting and mothers with under nutrition
设计一个适合帮助那些有成长阻碍的孩子和营养不足的母亲们
Not to forget to focus our attention on interventions in pregnancy. Stunting could starts intra uterine when mother is malnourished it will affect the development of unborn baby. Malnourished mother doesn't produce healthy milk for breastfeeding.
也千万别忘了要注意母亲在怀孕期的干预措施。如果孕妇有营养不良的现象，成长阻碍可以在母亲子宫内就可以产生了，这会影响的胎儿的发展。营养不良的母亲也提供不了健康的母乳给婴儿。

This is a problem of chronic malnutrition caused by insufficiency in quantity and quality of food.
这是一种由食物的量和质不足所引起的慢性营养不良。

What should we do? 我们应该怎么做？
How to solve the problem of chronic (stunting) malnutrition and underdevelopment of the children with a sustainable plan.
该如何经由可持续的计划来解决慢性（成长阻碍）营养不良和小孩子不能发战火是发育的缺陷。

We need to collect a demographic data **我们需要收集人口统计资料**
(Please find the form we have to fill in for individual child and parents).
（请参考我们设计的个人医疗档案）

When we are collecting the data we have to fill in the data accurately, especially about the **frequency and the quantity** of the food they consume. Use Yi spoon as measurement for quantity of food they eat.
但我们收集资料时，必须准确的填进资料，尤其是有关于他们进食的**次数和量**。使用彝族的勺子作为他们进食量的量度单位。

We have to **confirm** the data what we had collected. Do all of those children in the short list of acute malnutrition indeed only eat 2 meals a day with each meal contains only 1 Yi spoon of rice and watery like soup with Yi pickle? Or these are only the case of those 7 children we have seen last November in Xide?
我们也要在此的确认手收集回来的资料。好像，那些在名单里的小孩是不是每天都只是此两餐，每餐一勺子的饭和喝一些彝族酸菜汤而已？或者这只是喜德 7 位在 11 月底调查的孩子是以这种的饮食模式而已。

However we also have **to understand the background,** we do this by asking them questions as below:
然而我们还是要经由以下的问题来**了解他们的背景**：

1. What is the reason of their act/habits (provide their children so less food)?
   他们（给小孩子吃这么少的食物）是什么原因/习惯呢？
2. Is there sufficient knowledge about the good nutrition for them and for their children, pregnant and breastfeeding women in particular? That good nutrition is a must for the normal development of the children esp. those who are younger than 2 years old?
   他们对要为自己、小孩子、孕妇和正在母乳喂哺中的妇女提供良好营养充分的知识？就是说良好的营养对小孩子的正常成长，尤其是对两岁以下的孩子是必要的。
3. If yes what is the reason that children eat so less?
   a. Do they have enough income to buy/grow good food?
   b. Is that a matter of habit or tradition that adults have to eat well and children only could eat the remaining? If yes,
      i. Why? is that anything to do with the fact that children don't have to work?

   a. 他们又没有足够的收入来买/种有良好营养的食品？
   b. 是不是习惯上先让大人吃完呵斥好的，然后才让小孩子吃剩下的？如果“是”，
      i. 为什么？是不是因为小孩子不需要工作的原因呢？
4. Don't they have the sufficient knowledge about good nutrition?
   他们没有对于良好营养有足够的知识吗？
5. **Would it work if we educate them?**
   如果为他们提供教育，有用吗？

6. Are they willing to change their habit for the better condition of their children?
   他们愿意改变习惯给小孩子提供更好的条件？
7. **How could we help them?**
   我们应该如何帮助他们？

8. **What do the villagers think about our help?**
   村民对我们的帮助会有怎样的想法？
9. **How do they like us to help them? In which sense?**
   他们需要我们如何帮他们呢？在什么意义上？
10. We need to help how they could get the sufficient food sources but also how to prepare and storage food in hygienic way. (Hygiene of food is very important this to prevent infectious diseases, e.g. such as diarrhea)
    我么需要帮他们日和得到足够事物的来源但是同时也要教育他们如何卫生的处理和保存食物。（食物卫生对于防止传染性疾病，譬如是腹泻，很重要。）
11. Could/would they grow **crop for their own use** in their small garden for vitamins and mineral sources (micronutrient) but also carbohydrate: potatoes. corn, fruit trees etc。
    他们可不可以/想不想在自家的园子里耕种一些提供给自家的食物，不但以提供更好的维生素和矿物质(微营养素)，同时也可以提供碳水化合物：土豆，玉米，果树等等）
    AND 和
12. To hold **a small farm** (chicken, pigs: meat and egg as source of protein)
    建一个小型家庭式的农场（养鸡或是猪：肉和蛋以提供蛋白质）
13. **We need to give them hygiene training** how to prepare food, good sanitation habits. (tap water and toilet)
    我们需要为他们提供卫生教育，如何处理食品，良好的卫生习惯。（自来水和卫生间）

Ground/ Soil and weather research: 土地/泥土和气候的研究：

14. **Could we find (a) villager(s) in every village to collect the data** (minimal and maximal temperature and rain fail) from the weather station? Because of micro climate, we may need to put more than 1 weather station in each village.
    能不能在每个村里找的一位或是几位村民帮忙收集气候站资料（最高和最低的温度和雨量）？因为我们有可能需要在每个村里设置多于一个气候站来收集微气候的资料。
15. What is the sort of soil they have to work with in their field?
    他们的耕地上的泥土是属于那种泥土？
16. Do they have sufficient working tools, irrigation/water? Please express the irrigated land in % of the total land.
    如果没有，村民们人为什么解决方法能帮到他们？（引水道提供灌溉水，收集屋顶上的雨水，园子里打个水井？）
17. If not, what kind of solution the villagers would like to have which is workable for them? (Water reservoir with drain, roof water collection, well in the garden?)
    如果没有，村民们人为什么解决方法能帮到他们？（引水道提供灌溉水，收集屋顶上的雨水，园子里打个水井？）

18. What kind of devices we could provide those PALs with limb deformity to work in their fields?
    我们可以为那些四肢变形的康复者提供一些什么工作器材来让他们在田里工作？
19. Does every family has the possibility to grow a small garden beside their house?
    是不是每家每户都有一个院子可以用来耕种？
20. If they do have, are they willing to grow crop there for their own use?
    如果有，他们愿意耕种一些提供给自家的庄稼吗？
21. Do they have enough seeds to grow? (no hybrid seeds, because it is only good for one season)
    他们有没有足够的种子？（不要用杂交的种子，因为那只能种一个季度）。
22. What kind of vegetables and crops they use to grow?
    他们一般都种些什么菜和农作物？
23. What kind of vegetables they would like to grow but they can't? Why they cannot grow (are the seeds too expensive, is the soil not suitable? etc. etc.)
    他们想种但是又没办法中的蔬菜么？为什么种不成？（是不是种子太贵，或是泥土不适合等等的原因？）
24. Do they use fertilizer? (which one, pest resistant and fungi resistant?)
    他们有用肥料吗？（什么肥料，有用抗虫和菌的药吗？）
25. How they protect their crops in land from rats and fungi plaque (pest resistant and fungi resistant. expensive),
    他们怎样避免老鼠和菌害来保护农作物？（使用抗虫和菌的药， 太贵）
26. How do they store their crops?
    他们如何保存农作物？
27. How they protect their storage from rat, pest and fungi and other?
    他们保存浓浊无食如何防止老鼠、虫和菌或是其他的有害物？
28. What kind of preservation technique they are familiar with?
    他们懂得什么食品保存的方法？
29. Could we find (a) villager(s) in every village who are good in agriculture knowledge to each his fellow villagers, how to grow good crops in most efficient way?
    我们能不能在每一个村找到一位或是几位在种植的只是比较强的村名来教育其他村民更有效的种植农作物？
30. Are there any government plan in agriculture so far we/the villagers know?
31. 到目前为止我们/村民知不知道政府有没有一些农业计划？

Last but not least and quite important for the normal development beside **good nutrition** is the **cognitive and social stimulation.**

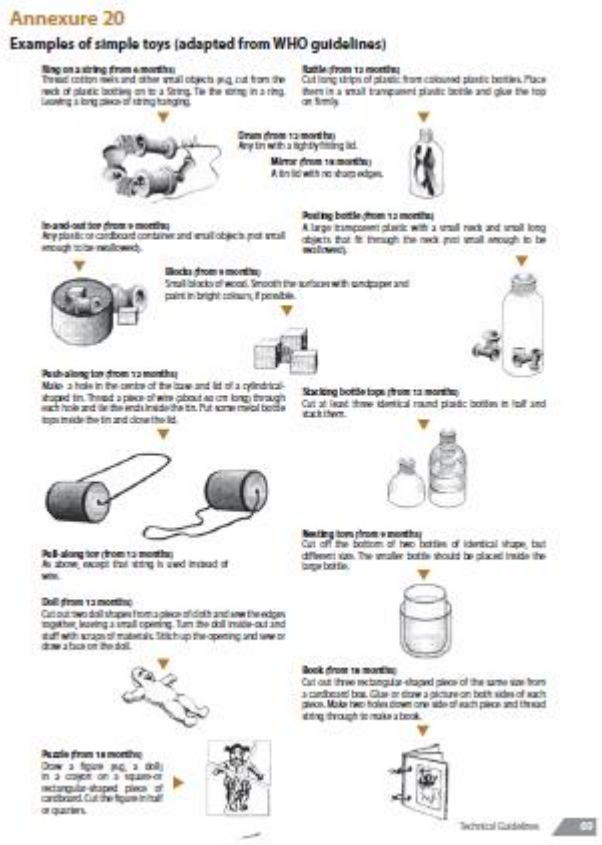
最后但并非是不重要的，就是除了提供小孩子好的营养以促进正常的发展以外，我么还得注重认知和社会的刺激。

Children need attention from their parents and family.

小孩需要父母和家人的关注。

To play with children is not a luxury activity, but it is important to stimulate their cognitive and social development. Please find below how you can make simple but good toys, It doesn't have to be an expensive toy.

跟小孩子玩不是奢侈的活动，但是这能刺激小孩子的认知和社会发展。可以参考以下的图片来制作简单而好的玩具，玩具不需要时昂贵的。



Annexure 20

Examples of simple toys (adapted from WHO guidelines)

Technical Guidelines